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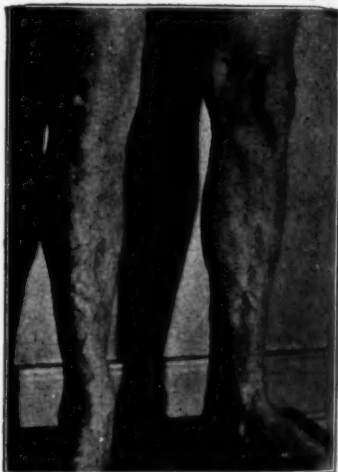
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Alcoholism Factors

Dr. Karl Menninger has recently emphasized the childish aspect of chronic alcoholism. Speaking before the Utah Medical Association on September 5th, he declared that alcoholism involved a character change growing out of a spoiled childhood, a feeling of inferiority, and sentiments of guilt and envy. There is deep maladjustment goading the victim to consume alcohol past the point where it is enjoyable. Detention in a hospital, out of reach of liquor, will not affect the psychological basis of his trouble. His only hope lies in "growing up." This kind of drinker is classified by Dr. Menninger as Type B; he is the one who so frequently furnishes the spectacle of a successful career ruined through alcoholic excess.

Dr. Menninger's Type A classifies the man who starts drinking in youth, never achieves much, and ends up as one extremely difficult to aid.

Sometimes an exponent of Type B can be induced to "take a tumble" to himself and get the ring out of his nose.

The nose ring is our own phrase, not Dr. Menninger's, and what we mean by it we shall try to elucidate. Dr. Menninger's teachings with respect to alcoholism are all true, but basically we have to consider something that he does not mention—the fact that group behaviorism absorbs and terrorizes the single personality. It is all a phase of the individual's conflict with the mass in the modern world, so well discussed by Everett Dean Martin in the book published by him in 1932 (New York, Henry Holt and Company).

The usages of certain social groups and imitative patterns based upon them by people who never entirely grow up, and whose happiness and success turn upon contacts and associations deemed essential by them in life, account for much of our alcoholism.

These group usages are familiar enough. The social clans concerned standardize eligi-

bility in various ways, but acceptance would be withheld, no matter how well qualified the aspirant might otherwise be, if the nose ring of alcoholism were shied at.

Ironically enough, it is the "individuals" thus roped, thrown and branded who often shout the most vociferously about "regimentation."

Also ironic is the fact that the "moulders of public opinion" who, for divers reasons, work the strings controlling the marionettes who make up the groups in question, do not themselves drink. Even Dr. Menninger's Class B would revolt if they could be made to realize this truth.

Dynamics of Heart and Circulation

The following quotation is from an actual case report:

A man, aged 70, who has had attacks of paroxysmal tachycardia at irregular intervals since the age of 15, was seized with an attack at 2:30 p.m., February 2, which lasted until 5:40 p.m. the same day. His pulse rate in the attack was found to be 210, which is three times his ordinary pulse rate. His blood pressure, which is ordinarily about 130 systolic and 80 diastolic, was found to be 76 systolic and 60 diastolic. There were no signs of congestive circulatory failure, no râles over the pulmonary bases, no coldness of the extremities or visible edema. The blood pressure remained about the same as already noted (76/60) for half an hour after the cessation of the attack and then began to rise.

Advocates of the theory of vascular peristalsis as a motive factor of the circulation would apply that theory to the explanation of the clinical phenomena recited in the foregoing quotation.

On the other hand, upholders in the field of physiology of the conventional dogma pertaining to the circulation are very likely to attempt to account for the phenomena under discussion, if called upon, in some such manner as we now set forth:

In a standard textbook the currently accepted theory of the dynamics of the circulation is expressed as follows: "The ventricles pump the blood from the terminal reservoirs (auricles) into the distributing system under an initial pressure sufficient to secure a continuous capillary flow, as well as a return flow to the heart." This fully explains why the heart alone contracting at the rate of 210 per minute in the very low portion of the blood pressure scale (76/60), and with a pulse pressure of only 16,

develops force enough to push the eleven pints, more or less, of blood mass successfully through the vascular circuit in the accepted circulation time, against the resistance in the hundred thousand miles or more of vascular tubing. When the heart rate increases to 200 or above a minute, the period of diastolic filling is cut short to such an extent that not only each systolic discharge but also the minute output is decreased. The effects on systolic and diastolic blood pressure are those of decreased systolic discharge; that is, the effects would be the exact opposite of those described in the standard textbooks, for augmented systolic discharge. No other dynamic effect is conceivable than that systolic pressure should fall more than diastolic. This is beautifully illustrated by the data in the case cited. It must not be forgotten that the blood pressure 76/60 mm. of mercury in the central vessels, regardless of how created, represents the pressure head that forces blood through the vascular circuit. And as to that hundred thousand miles of vascular tubing, it is conceivable that the minute vessels, if placed end to end, might stretch round the globe just as considerable linear mileage could be calculated if all the streets of a large city were similarly connected. It would be unfair, however, to leave the impression that a tourist or wandering minstrel (à la Nanki-Poo of *Mikado* fame) passing through such a city would actually have to travel that distance or would meet the traffic resistance of all the streets combined. This is equally true for circulating corpuscles.

But if one thinks out the suggested analogy—of tourists or wandering minstrels passing through a large city compared to the corpuscles—one realizes the sophistry in the argument in behalf of the dogma; for the tourists travel through the city on their own power and as practically unobstructed individuals, whereas the corpuscles and plasma are governed as masses, by forces exterior to themselves, in their progression through the complete system of vascular avenues, whose total resistance must obviously be met by their total volume. How, then, can one postulate anything of this sort as having application to both tourists and corpuscles? If the corpuscles are like the tourists, then the circulation of the plasma is not needed; the plasma could just as well stand still in the vessels, so long as the corpuscles proceeded under their own power. Of course, in such circumstances, no great force would be required to maintain the "circulation." The circulation, viewed in this "metaphysical" light, is chiefly a circulation of touring corpuscles "on their own."

History is repeating itself; one recalls the defense of Galen and his doctrines that went on for centuries. When, for example, in the sixteenth century, independent observers began to attack the Galenic teaching that "The blood sweats from the right into the left ventricle through passages which escape the human vision," they were subjected to the same kind of reasoning as that which inspires the present-day defenders of the dogma of the wholly adequate

heart. Vesalius said, sardonically, of the insistence of his Galenic opponents that certain absurd anatomic teachings were gospel truth: "We are driven to wonder at the handiwork of the Almighty." It would seem that the authority of the experts must not be too violently assailed today, any more than in the days of Galen's supremacy. So, perhaps, shall the minstrels and tourists of imaginative physiologists wander aimlessly yet awhile, as *Coriolanus* hath it, "through the rivers of our blood, even to the court, the heart."

The Mothering of a Titan

Benjamin Franklin was born at noon on January 17, 1706. "His mother brought him to be baptized that same afternoon in a Boston church."

It is not hard to guess from whom Franklin got his store of energy and habit of life: "My rule in life is to go straight forward in doing what appears to be right, leaving the consequences to Providence."

This mother was the second wife of Franklin's father and bore the latter ten children, Benjamin being the eighth. She was the daughter of Peter Folger, leading Nantucket settler noted for his philanthropy and tolerance. In other words, she was derived from the best stock in the land.

No ill consequences were visited upon Franklin's mother, whose stamina took her, as a matter of course, upon that afternoon's affairs. But she was not a present-day psychoneurotic, "not strong enough" to bear children, and it is safe to say that she did not have a flat pelvis nor inefficient metabolism; and she was a woman of exceptional intelligence. To feminine weaklings of today she must seem an inscrutable superwoman, of incomprehensible obstetric prowess. None of these weaklings would be taking an eighth child to church on the day of his birth—she would be dead long before that of "excessive childbearing." It took such a woman to mother a Franklin.

Franklins, we notice, do not seem to be born any more—and taken to church by their mothers the same afternoon. There must be reasons for this.

Urea As A Healing Agent

Dr. William Robinson, of the U. S. Department of Agriculture, has recently an-

nounced that urea may be responsible, along with allantoin, for the remarkable healing produced by maggots. This scientist found allantoin present in maggot excretions and now finds that urea is also present and tests seem to indicate that urea by itself induces the same healing as maggots or allantoin. It will require time to evaluate these findings.

In the August issue of the *American Journal of Surgery*, Dr. Robinson gives evidence that urea solution may be successful in the treatment of osteomyelitis, gangrene, old ulcers, stubborn wounds, infected burns and non-healing gums and tooth sockets.

Urea is much cheaper than allantoin and is used mostly as a two per cent solution. It is highly soluble, unlike allantoin. In fact, it is possible that the side chain of allantoin may be chipped off to form urea.

M. W. T.

Popular Health Instruction

Personal experience is a good health instructor: "The burnt child dreads the fire;" "A man is a fool or a physician at forty." Other teachers are: books, wise men and organized medicine speaking through its representatives on the platform, over the radio and in the public press; and the private physician.

Popular health instruction by means of the printed or spoken word addressed to the multitude is general in character; the individual addressed must translate the general into the particular for his occasion, which is difficult for many on account of lack of understanding or intelligence. Even if the teaching is infallible, there is always the chance of its misinterpretation or misapplication.

To the method of popular health instruction by representatives of organized medicine addressing generally the public, in addition to the objection above referred to, there is this other objection, viz., that such a method is also used by medical irregulars. The public is not always discriminating. There is the danger not only of failure to get the message over or of getting it over wrong, but also of loss of prestige and authority.

The best method of popular health instruction would seem to be by the private physician teaching his individual patient how to keep well. And this method is antithetic to what the socializing trend would impose.

But as an expedient, for urgent or emergency public health needs, there is a place for generally promulgated, popular health instruction.

E. E. C.

Chaos and Order

What we call chaos is only the shifting of social gears that grind more or less. We deplore the lack of order incidental thereto but the order that follows is likely to be equally deplorable. Nevertheless it is order, of a sort. There is order in Russia; there is order in Italy; there is order in Germany.

The trend of thought today is revolutionary. Dr. James Rowland Angell, President of Yale University, recently discussed the pressure that the universities are beginning to feel from the groups seeking a totalitarian state. It seems incredible that restriction of the intellectual and moral freedom of college faculties and the imposition of taxation sufficient to destroy college benefactors should be the future lot of the universities as a result of sinister trends. Education in general is definitely threatened with government control. So a new order looms for the universities and schools.

We have developed a lot of euphemisms to disguise our true aims. When we say that we aim "to give human life and human society the central place in our day" a pleasant and ingratiating impression is given, but we are really announcing that the old transcendental and intangible values no longer have any meaning for us. There is much dynamite in many of these new statements that sound so well. And we do not always realize that we are being told, not about an aspiration, but about an accomplished fact and a new order of things.

Selfish forces are smothering and supplanting the old standards. Secularization of everything is rampant. We face an inescapable doom—another order. Our favorite narcotic is dreams about Utopia. Utopia is not what we will get.

In Russia until recently you were a social heretic if you did not believe in legalized abortion. To Russian (and other) moralists of the old order (when people were "good" or "bad") such a turn of events would be incredible. To the Russia of the new order the chance breeding of the past was, for a time at least, incredible. So what?

The coming about of such "orderly" conditions is not by way of social accident; they are the logical result of our hard-boiled trends. Why be shocked?

Anything that serves selfish requirements, as does legalized abortion, for example, will be welcomed by the coming generations. As we see the future social set-up, unemotionally, we can easily vision a society "ordered" by an especial regard for legalized infanticide. One who concedes the utter propriety and desirability of legalized abortion can not resist the appeal of infanticide. There is no economic or social argument for abortion that does not hold equal weight for infanticide. Moreover, there are two arguments for infanticide that the wholly neopaganized world that is perhaps soon to be would accept eagerly. One is that contraceptive technique could be utterly abandoned as a needless and unreliable burden, since much of the fruit of normal intercourse, at full term birth, could be legally disposed of by the state as a mere nuisance. The other is that forced interruption of pregnancy, with all the biologic damage entailed, need never be resorted to.

The industrial requirements of the totalitarian world of the future can be met by socially adjusted infanticide on the part of unsentimental, realistic, non-moral and "considerate" administrators.

If liberty, conscience and intellectual freedom can be scrapped by modern totalitarian states, why can not old-fashioned parental nonsense be terminated?

The idea of infanticide should not arouse indignation in a world which cynically and habitually kills thousands of children on the public highways.

Those who crave for order for its own sake should look forward to the new dispensation in the same spirit as Christian and Hopeful, in the *Pilgrim's Progress*, saw the Celestial City from the Delectable Mountains. For there will then be no more chaos and no more diaphragm pessaries; no more confusion and no more brats than are really necessary to perpetuate the race, man the factories and markets, produce wealth for a very small plutocracy, and wage war as a kind of controlled supersport and planned economic stimulant.

The Multiplying Trailer

The past Summer has seen a great stride in autoists' use of trailers as "rolling homes" wherewith and wherein to escape

rent and taxes. One million Americans are now living in trailers and practically every state in the Union provides trailer camps. The manufacture of trailers is showing signs of developing into a lusty new industry, with the chief production center in Michigan. The fact is that the trailer plants cannot at present supply the demand, and yet many of them are running day and night. About three hundred manufacturers are engaged in the industry and it is estimated that 300,000 trailer coaches could be sold this year if that many could be built. Recently the Pierce-Arrow group announced that it was entering the field; hitherto, it appears, the automobile manufacturers have not included trailers in their production activities.

Obviously, the trailer introduces new health hazards by knitting still more closely the community units of the entire country. One more complexity is being added to our public health problems. This factor, while making for health from one angle, must be studied for other potentialities. The fast-growing transient population that it is taking permanently out of settled community life is something for sanitarians to think about very seriously. Immunity from rent and taxes must not be supplemented by immunity from especially rigid sanitary control as the trailer nomads' impulses move them rapidly from one district to another.

LOW PAY PLUS HOGGED PROFITS EQUALS SOCIALIZED MEDICINE

Political and economic questions have a direct effect upon medical practice. In the effort to protect and rehabilitate mankind, health is one of the first things thought about. To the superficial thinker health suggests disease and the relations between doctor and patient. Hence the well-meaning sociologist or reformer states as the first point of his program that everyone is entitled to the best medical service. They forget that the best service on a health program one can render another is to prevent him from getting sick. If this be so the first thought should be for proper housing. Everyone should have a good home which shall be cool in summer and warm in winter. Everyone should be well-clothed.

Such a program carried out on a universal scale would do more to prevent and cure disease than all the doctors in the country.—*Pierce County Medical Society Bulletin* (Tacoma, Washington).

THE TOLERANCE OF TUBERCULOUS PATIENTS FOR BILATERAL ARTIFICIAL PNEUMOTHORAX

CHRISTOPHER J. STRINGER, M.D.

Detroit, Michigan

In presenting a discussion of collapse therapy as employed in pulmonary tuberculosis and in limiting that discussion to a single surgical procedure as the title of this paper would suggest, it is essential first to point out that little attempt is made at Herman Kiefer Hospital to evaluate or to emphasize the merits of any one procedure over another in obtaining rest of the involved lung area.

The general plan of treatment in this hospital has recently been discussed by O'Brien (1), the central idea being to close cavities and render the patient sputum-free for tubercle bacilli as rapidly and as effectively as possible. We feel rather strongly that not only the public health problem but also the best interests of the individual patient are more adequately served in such a manner. Regarding bilateral artificial pneumothorax O'Brien states: "If extensive disease with cavitation exists on both sides it is better to begin bilateral pneumothorax early without the use of phrenic operations to minimize as much as possible the danger of spontaneous pneumothorax which is much more serious if it occurs in the contralateral lung after the other lung has been greatly collapsed."

Almost a quarter of a century ago Ascoli, after refuting the teaching of Forlanini, who maintained that it was necessary to produce high pressure pneumothorax to obtain results, advocated the use of simultaneous bilateral pneumothorax in the treatment of tuberculosis. However, the value of this form of therapy is not yet fully appreciated. Herve (2) reported a few cases in 1922 which showed that satisfactory results could be realized by artificial pneumothorax of the second lung after the one first treated had shown no signs of activity for

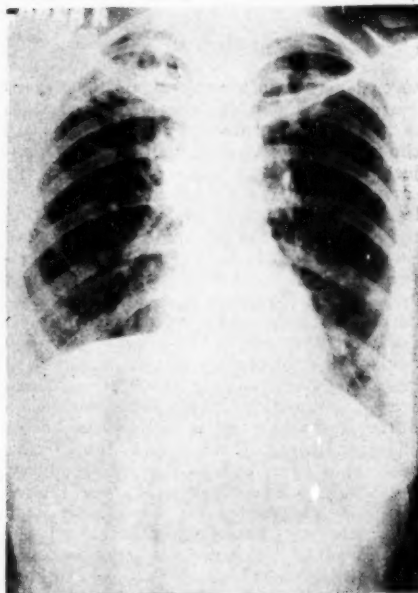
several months after re-expansion. Bezancon and Jacquelin (3) reported three cases in 1924 and advocated its use in acute broncho-pulmonary tuberculosis in young subjects. They stated their opinion that the early development of extensive tuberculous lesions in the healthy lung is an indication for bilateral pneumothorax. In the United States Geer (4) in 1923 reported his experience with this form of procedure. Kinsella and Mattill (5) gave a comprehensive report of their favorable experience in 1927. Coulaud (6) reported 116 cases in 1930 and advised against the use of simultaneous collapse in patients with certain extra-pulmonary complications. Since 1927 the foreign literature has abounded with discussions of bilateral pneumothorax and there have been many contributions from this country, notably Tice and Hruby (7), and Pollock (8), who has pointed out that bilateral collapse therapy has greatly increased the case-group to which definite treatment may be applied. More recently there have been reports by Carmen (9) and Corsello and Bruckheimer (10), who conclude that this form of therapy is effective and comparatively safe.

It is still common practice in some sections to allow in the majority of cases a period of observation of three to six months on bed rest alone, denying the patient the additional aid of collapse therapy for this period of time, during which the disease is likely to be most destructive. Douglas, Nalbant and Pinner (11) in their study of sub-apical versus insidious apical tuberculosis point out that lesions far advanced as to extent and excavations frequently develop within less than six months. Obviously three things may happen to the patient following a program of bed rest alone, i. e., he may become worse, he may remain practically stationary, or he may improve. In the first instance time has been lost and the problem of effective therapeutics has become greater. In the few cases who remain es-

From the Herman Kiefer Hospital.
The writer wishes to acknowledge the valued suggestions of Dr. Bruce H. Douglas and the technical assistance of Mr. E. L. Douglas in the preparation of this article.

essentially unchanged the period of observation might be justified, but who is there to predict which case of active tuberculosis will remain unchanged? It is probable that the majority of patients who are placed on bed rest alone will improve temporarily but

Case 1, Fig. 1



April 4, 1933

Appearance of the x-ray before the institution of collapse therapy.

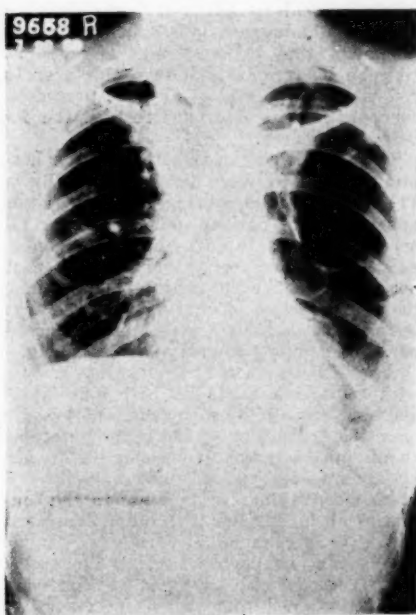
this very fact becomes a danger in that it leads to a false sense of security. Much time is saved and much risk is avoided by promptly augmenting bed rest with collapse therapy. The views of Coryllos regarding so-called exudative benign lesions are to say the very least impracticable from the standpoint of adequate treatment.

The topic of bilateral pneumothorax cannot be exhausted in so brief a paper nor will there be any attempt to arrive at general conclusions. The primary purpose at this time is to report the observation that partial collapse of both lungs with artificial pneumothorax has fewer contra-indications than has previously been supposed and probably has a wider range of usefulness than is at present appreciated.

The thought has been expressed in some quarters that if it becomes necessary to re-expand one lung in bilateral pneumothorax, then that lung will become rapidly worse, as it assumes a larger share of respiration. As a matter of fact the reverse is usually true for reasons which have been pointed out by Head (12) and which have been observed here.

The two outstanding contra-indications to extensive collapse are found in those patients whose disease has resulted in toxicity and emaciation and in those whose pulmonary tuberculosis is complicated by occupa-

Case 1, Fig. 2



July 29, 1936

Selective bilateral collapse

tional fibrosis. Carmen (9) gives a list of ten contra-indications, some of which we feel should not be so classified. Extensive bilateral lesions are not necessarily a contra-indication if the general condition of the patient is such that he will tolerate collapse. Pleuritic adhesions are not always a contra-indication, as in the case report of U. de Michells (13). A patient on bed rest can certainly tolerate a vital capacity lower than that indicated by Carmen (2,000

cc.). The most reliable single index to the tolerance of a patient for bilateral artificial pneumothorax is naturally that patient's vital capacity. But it is surprising to what extent the respiratory reserve can be reduced and the patient still be kept comfortable on bed rest. The presence of tuberculous lesions in other organs and the presence of other disease entities in the tuberculous patient are not contra-indications but are rather additional reasons for the institution of adequate collapse measures.

The cases reported here are advanced cases of pulmonary tuberculosis representing all the patients with bilateral pneumothorax on one unit of the tuberculosis division of Herman Kiefer Hospital. All are still in the hospital and have been observed daily to the time of this writing. Each hospital unit is comprised of 66 patients so that the 8 cases reported constitute 12% of the total on this particular service.

One case representative of each group of associated conditions considered in this article will be reported in detail and the results of the remainder given in table form.

Case 1.—L. R.—Housewife, 29 years of age, admitted to the hospital September 26, 1930, complaining of pleurisy, cough and expectoration, night sweats and hemorrhage. She dated the onset from two years previous to admission and had been in bed at home off and on during that time. There had been no previous serious illnesses and no known contact. There was one pregnancy eleven years prior to admission with normal delivery.

The general physical examination on admission revealed a well-developed, but somewhat emaciated, white female patient who did not appear to be acutely ill. The heart sounds were normal. Blood pressure 108/70. There were no positive findings except those referable to the chest. Inspection: Marked decrease in excursion on both sides in the upper one-half, more evident on the right. Palpation: No demonstrable abnormalities. Percussion: Impaired resonance on the right in the upper one-half. Auscultation: Right; breath sounds bronchial in character in the infraclavicular region with moderately coarse râles in the upper one-third. Left: few coarse râles in the first interspace anteriorly and above the scapula posteriorly. Breath sounds diminished in intensity below the scapula.

On admission the temperature was 102.6 and the pulse rate 124 per minute.

The x-ray of September 29, 1930, was reported as follows: Diaphragm—The costophrenic angles on both sides are obliterated. The other angles are clear. The heart is apparently normal. Right lung: There are scattered areas of infiltration mixed in type throughout nearly the entire lung. There are small areas of rarefaction in the infraclavicular region but no clearly outlined cavities are seen. Left lung: Scattered areas of infiltration of a similar type throughout nearly the entire lung and indistinct areas of rarefaction at the base.

The sputum was positive for tubercle bacilli. Leukocyte count was 14,400, erythrocytes 3,780,000, hemoglobin 70 per cent. Wassermann negative. Urine essentially normal.

At the staff meeting of October 6, 1930, the patient was classified as III C, unfavorable, and collapse therapy was thought inadvisable.

Hospital Course

The patient gradually became less toxic, temperature and pulse dropped to normal and she gained from 112 to 136 lbs. by May, 1931, at which time she developed an anal fissure. This responded well to conservative treatment and has not recurred. In May, 1932, she developed symptoms of tuberculous enteritis (confirmed by x-ray and located in the terminal ileum), and began to lose weight rapidly, her weight in May, 1933, being 105 lbs.

Heliotherapy was started in December, 1932, and pneumoperitoneum in February, 1933, and continued until January, 1934, with relief of symptoms and gradual improvement in the enteritis.

Following some improvement in the appearance of the lesion in the x-ray, there was an increase in the amount of involvement of the right lung in April, 1933 (Case I, Figure 1) and a temporary paralysis of the right phrenic nerve was done April 18, 1933, with elevation and immobilization of the right hemidiaphragm. This paralysis was made permanent February 22, 1934. The amount and character of the infiltration changed very little and right artificial pneumothorax was started in July, 1934, and left artificial pneumothorax in May, 1935. The intrapleural pressures were negative at the start but have been highly positive (above the manometer scale) on the right since November, 1935 and on the left since January, 1936. There has been no pleural fluid but the adhesive pleuritis made these high pressures necessary in order to main-

tain the pleural space and by the same token it has been possible to increase the selectivity of the collapse (Case I, Figure 2). She receives from 200 to 300 cc. of air per week on each side (on different days). The vital capacity is 950 cc. and the tidal air is 400 cc. and the patient is perfectly comfortable. She has recently been given bathroom privileges. The sputum was alternately positive and negative until three months ago, since which time it has been persistently negative. She has gained weight steadily since the first of this year and has had no gastro-intestinal symptoms since the pneumothorax was instituted. She is entirely symptom-free at the present time.

Comment

The four cases in this group (Table I) all had some evidence of tuberculous ulcerations in the gastro-intestinal tract before treatment was started. There has been relief of these symptoms in each instance, one of the patients having had pneumoperitoneum. Relief is frequently obtained before the pulmonary disease has sufficiently improved to render the patient's sputum negative for tubercle bacilli. One patient has not done well because of the complication of bilateral pleural fluid and inadequate collapse of one lung.

If patient L. R. were admitted to the hospital now pneumothorax would probably be started at once. At the time of her admission 57 per cent of the pulmonary cases were receiving some form of collapse therapy. At the present time the percentage is 85 to 90 per cent. The two outstanding points of

interest which are recalled by these cases are (1) the fallacy of giving up pneumothorax because of high positive pressures when the patient is comfortable and when other measures are not applicable, and (2) the relief of gastro-intestinal symptoms.

Case II.—H. Z.—White, female patient, admitted to the hospital in March, 1930, at which time she was 15 years of age. She gave a history of cough, expectoration, hemoptysis, pleurisy, loss of weight, fatigue, and night sweats. Symptoms had started in 1927 but the diagnosis was not made until 1929, at which time hospitalization was refused. She came to the hospital March 21, 1930, at which time her symptoms had progressed. A diagnosis of diabetes had been made prior to her admission. There were no other serious illnesses and there had been no known contact. The general physical examination at the time of admission revealed a well developed and fairly well-nourished white girl who did not appear to be acutely ill. There were no positive findings except those related to the chest. Inspection: No abnormalities. Palpation: No abnormalities. Percussion: Right—slight impairment of the note in the upper one-half; left, slight impairment of the note in the upper one-half. The diaphragm was freely mobile. Auscultation: Right, moderately coarse râles above the clavicle and in the upper one-half posteriorly; left, moderately coarse râles in the upper one-third anteriorly and posteriorly.

The temperature on admission was 98.6; pulse was 72 and regular in force and rhythm.

TABLE I—BILATERAL PULMONARY TUBERCULOSIS AND TUBERCULOUS ENTERITIS TREATED WITH BILATERAL ARTIFICIAL PNEUMOTHORAX

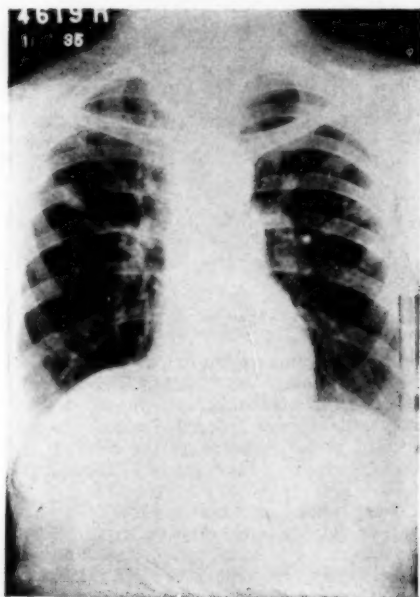
Case	Age	Sex	Symptoms on Admission		Sputum Before Treatment	Pneumothorax		Other Treatment	Intrapleural Pressures		Complications	Present Condition
			Gastro-Intestinal	Pulmonary		Right	Left		Right	Left		
L. R.	29	F	Severe	Severe	Positive	7/1934	5/1935	Pneumoperitoneum	Pos.	Pos.	None	Asymptomatic with negative sputum.
I. T.	21	F	Severe	Severe	Positive	9/1935	12/1935	None	Neg.	Neg.	None	Asymptomatic but sputum positive. Pleural adhesions to be cut.
H. W.	18	F	Moderate	Severe	Positive	7/1935	11/1935	None	Neg.	Neg.	Bilateral pleural fluid	Relief of abdominal symptoms. General condition unsatisfactory due to fluid.
A. D.	19	F	Moderate	Severe	Positive	5/1935	6/1936	None	Neg.	Neg.	None	Asymptomatic with negative sputum.

The x-ray on admission was reported as follows: Diaphragm and heart reveal no pathology. Right lung: There are scattered infiltrations throughout the upper half of the lung. There are no clearly outlined cavities. Left lung: There are scattered infiltrations in the region of the apex and at the middle of the lung. There is a small indistinct area in the apical region suggestive of a cavity.

The sputum was positive for tubercle bacilli. Leukocyte count was 8,300, erythrocytes were 4,090,000, hemoglobin 80 per cent, urine positive for sugar. Blood sugar 138 mgm. after the institution of insulin therapy.

At the staff meeting of March 22, 1930, the patient was classified as III B favorable, and diabetes mellitus. Bed rest and treatment of the diabetes were the only recommendations at that time.

Case II, Fig. 1



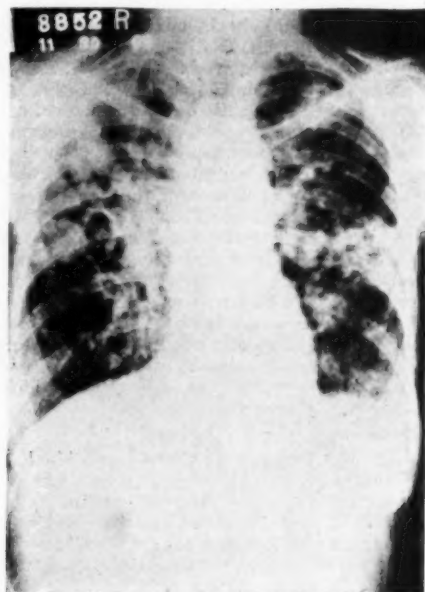
Jan. 11, 1935
Appearance of the x-ray 2½ years after leaving the hospital during which time the diabetes was well controlled.

Hospital Course

The patient improved some and the diabetes was fairly well controlled while in the

hospital. She left the hospital against advice in July, 1932, and we did not hear from her again until January, 1935, at which time she was examined in the out-patient department and the tuberculosis had apparently become arrested (Case II, Figure 1). In

Case II, Fig. 2



Nov. 30, 1935
Appearance of the x-ray 10½ months later during which time the diabetes had been inadequately managed.

November, 1935, she developed a cold followed by productive cough and loss of weight and reported to the out-patient department for another examination. The x-ray taken at that time (Case II, Figure 2) was reported as follows—Right lung: There are dense infiltrations of the mixed type throughout the upper half of the lung at this time and less dense infiltrations at the base. There are many areas of rarefaction throughout the upper half of the lung; the largest is at the 1st interspace and measures about 3 or 4 cm. in diameter. Left lung: Dense infiltrations of the mixed type throughout nearly the entire lung. There are many small excavations throughout the infraclavicular region and middle of the lung.

The sputum was again positive and the

diabetes was out of control, blood sugar being 400 mgm. She had a leukocyte count of 24,000.

At the staff meeting of November 10, 1935, two months of observation and an attempt to control the diabetes was decided upon as the procedure of choice. At the end of this time the condition of the patient had improved somewhat and it was decided that she should have bilateral artificial pneumothorax. Artificial pneumothorax was started on the right side February 21, 1936, and on the left side March 17, 1936. She is receiving weekly refills of 200 to 300 cc. of air per week on each side (on different days), the pressures being slightly positive. Sputum has been negative for tubercle bacilli since April, 1936, and the diabetes is fairly well controlled. There was some difficulty in regard to the diabetes at first and this condition is apparently better controlled since the institution of the bilateral pneumothorax. Patient's weight at the time of her readmission was 89 lbs. Her present weight is 117 lbs. and she is symptom-free. With the present amount of collapse (Case II, Figure 3) vital capacity is 950 cc. and the tidal air 450 cc.

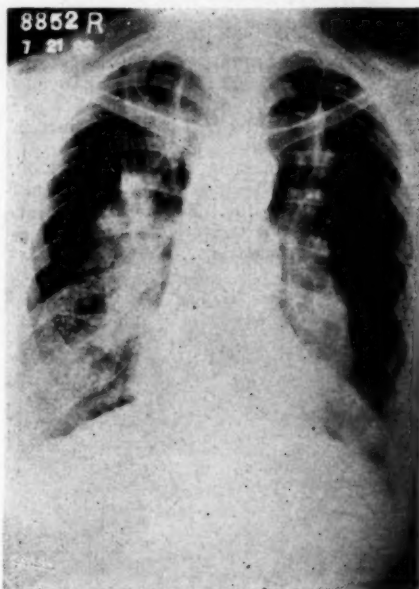
Comment

The two cases in this group (Table II) are examples of the value of adequate collapse therapy in the diabetic patient. The case H. Z. exemplifies, as has been reported by Myers and McKean (14), the relapse of an apparently arrested tuberculosis concurrent with gross neglect of associated diabetes. In both of these instances the diabetes has been more adequately controlled with the institution of collapse and similarly the tuberculosis has been aided by adequate management of the diabetes. We agree with Wiener and Kavee (15) that pneumothorax in the diabetic is the procedure of greatest value. However, we disagree with their conclusion that diet and insulin therapy play no part in ameliorating the tuberculous or in bringing about exacerbations.

Case III.—D. S.—A 14 year old girl admitted to the hospital June 6, 1935, complaining of loss of weight and anorexia. She had been checked as a contact, her father having died of tuberculosis in January, 1935. She also complained of pain in the right hip, these symptoms having been present for approximately two months. There were no previous serious illnesses. The general physical examination revealed a female patient apparently younger than the stated age,

who did not appear to be acutely ill. The mouth was in poor hygienic condition. The right hip was tender and slightly swollen. Examination of the chest revealed—Inspection: No abnormalities. Palpation: No demonstrable abnormalities. Percussion: Im-

Case II, Fig. 3



July 21, 1936
Effective bilateral collapse but with adhesions to both apices.

paired resonance in the upper one-third on the right side. Auscultation: Right; bronchovesicular breathing and fine to moderately coarse rales from the second rib and the 4th vertebral spine to the apex. Left; harsh breathing throughout; no definite râles.

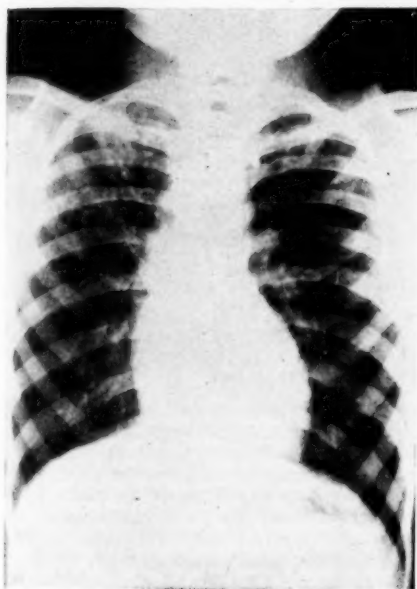
Temperature on admission was 100; pulse 96 per minute and regular in force and rhythm.

X-ray on admission (Case III, Figure 1) was reported as follows: The diaphragm and heart reveal no abnormality. Right lung: There are exudative infiltrations throughout the upper half of the lung. There is an area of rarefaction at the level of the clavicle measuring about 1 cm. in diameter. Left lung: Exudative infiltrations throughout the upper third of the lung; no definite cavities found.

TABLE II—BILATERAL PULMONARY TUBERCULOSIS WITH DIABETES TREATED WITH BILATERAL ARTIFICIAL PNEUMOTHORAX

Case	Age	Sex	Symptoms		Sputum Before Treat- ment	Blood Admission	Sugar Present	Pneumothorax		Intrapleural Pressures		Comph Right Left	cations	Presens Condition
			on Admission	Di- betic	monary			Right	Left	Right	Left			
H. Z.	15	F.	Moderate	Severe	Positive	400 mgm.	72-149 mgm.	2/1936	3/1936	Neg.	Neg.	None	None	Marked improvement of diabetes and tuberculosis. Sputum negative.
J. K.	44	F.	Severe	Moderate	Positive	258 mgm.	78-148 mgm.	4/1936	6/1936	Neg.	Neg.	None	None	Marked improvement of diabetes and tuberculosis. Sputum negative.

Case III, Fig. 1



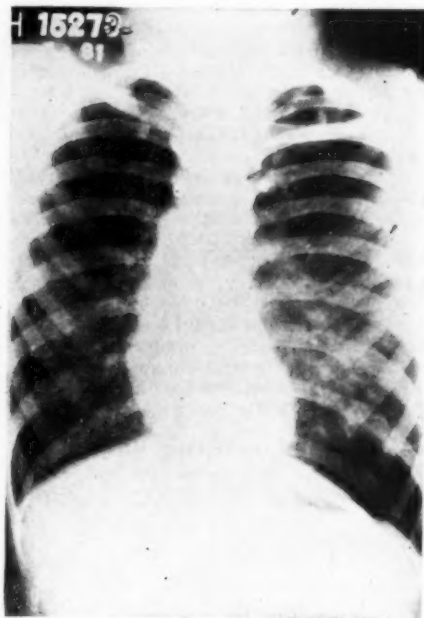
June 7, 1935

Appearance of x-ray on admission

Sputum on admission was negative for tubercle bacilli. There were 10,700 leukocytes, 4,080,000 erythrocytes and 75% hemoglobin. Wassermann was negative. There was a trace of albumin in the urine, which finding has persisted. X-ray of the right hip was reported as follows: There is a marked destruction of the acetabulum and a narrowing of the joint space, undoubtedly a tuberculous process.

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Case III, Fig. 2



July 31, 1936

Selective bilateral collapse.

At the staff meeting of June 11, 1935, the patient was classified as II B favorable, and tuberculosis of the right hip. Left artificial pneumothorax was decided upon.

Hospital Course

The pneumothorax on the left side was started June 16, 1935, a satisfactory pleural space being obtained. Skin traction was applied to the right leg with relief of pain.

TABLE III—BILATERAL PULMONARY TUBERCULOSIS AND SKELETAL TUBERCULOSIS TREATED WITH BILATERAL ARTIFICIAL PNEUMOTHORAX

Case	Age	Sex	Symptoms on Admission		Sputum Before Treatment	Pneumothorax Right	Pneumothorax Left	Other Treatment	Intrapleural Pressures		Complications	Present Condition
			Skeletal	Pulmonary					Right	Left		
D. S.	14	F	Severe	Severe	Negative	9/1935	6/1935	Skin traction from r.hip.	Neg.	Neg.	None	Asymptomatic and sputum negative.
S. K.	21	F	None	Severe	Positive	1/1935	6/1936	Bradford lypos-fram. itive	Slight-ly pos-itive	Neg.	Pleural fluid on rt.	Asymptomatic and sputum decreased in amount. Still has occasional positive.

In September, 1935, the x-ray was reported as follows: Right lung—There is a partial collapse of the upper lobe, with small areas of rarefaction in the infraclavicular region; no well defined cavities. Left lung—There is a marked increase in density in the infraclavicular region and a definite excavation at the 1st interspace which was not clearly visible at former examinations. Following this examination conference decided that left artificial pneumothorax should be added. This was started September 16, 1935. Intrapleural pressures are being maintained at a slightly positive level. At the present time the vital capacity is 1,100 cc. and the tidal air 375 cc. and the patient is perfectly comfortable. There is a selective bilateral collapse (Case III, Figure 2). Traction has been removed from the right leg because of skin irritation and there has not been a return of symptoms referable to this part. There is no evidence of toxicity at this time.

The two cases of associated skeletal tuberculosis in this series (Table III) offer nothing unusual but are recorded with the suggestion that such means as are available should be used to control the pulmonary disease before attempting surgical fusion operations.

From a current group of 66 patients 8 are being treated with bilateral artificial pneumothorax. Four of these patients have a tuberculous enteritis. Only one of these (L. R.) received treatment specifically directed at the enteritis. She was treated with pneumoperitoneum for a period of eleven months. There has been relief or amelioration of symptoms in all instances.

Two of the patients have a severe associated diabetes which has been much better controlled since the institution of bilateral

artificial pneumothorax. When the diabetes was permitted to get out of control the tuberculosis spread rapidly.

Two of the patients have their pulmonary tuberculosis complicated by bone involvement which is being treated conservatively while the pulmonary tuberculosis is being treated with bilateral artificial pneumothorax. Both will be candidates for surgical fusion when their pulmonary disease has been quiescent over a sufficient period of time.

The vital capacity has been considerably reduced in all instances and markedly reduced (approaching the tidal air) in some of the patients. With hospital management this has not resulted in diminution of the cardiorespiratory reserve sufficient to cause embarrassment.

Conclusion

I. Of four patients with far advanced bilateral pulmonary tuberculosis complicated by tuberculous enteritis being treated with simultaneous bilateral artificial pneumothorax, three have responded very well and are symptom-free; two are sputum-negative for tubercle bacilli; the pneumothorax in one has been complicated by bilateral pleural fluid.

II. Of two patients, one with far advanced and one with moderately advanced pulmonary tuberculosis associated with diabetes being treated with bilateral artificial pneumothorax, both are symptom-free and sputum-negative for tubercle bacilli.

III. Of two patients with bilateral far advanced pulmonary tuberculosis complicated by skeletal tuberculosis being treated with bilateral artificial pneumothorax, one is entirely symptom-free and sputum-free for tubercle bacilli and one has developed

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THE MECHANISM OF INSULIN ACTION

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THE action of insulin is so closely associated with the symptom complex of diabetes that the lack of the former has been adopted as the apparent cause of the latter; and in studying the former we most effectively study the latter. Past studies of insulin have not been very fruitful, largely on account of the predominance, in the minds of students of insulin, of certain theories of the older masters, Von Noorden, Naunym and Minkowski, which have so obscured the immediate purpose of the research, i.e., the action of insulin, with such general questions as the oxidation of glucose and the formation of glycogen in the tissue cells, that the primary fact of all, viz., the action of insulin, when it first leaves the pancreas and enters the portal circulation, upon the glucose molecule and the inorganic phosphates (and perhaps other effects), has been seriously neglected or entirely overlooked. The formation of glycogen and the oxidation of glucose are late stages in the metabolism of glucose; they represent the ends of a metabolic chain in which many other factors besides insulin take part. I do not believe, nor do many others, that pancreatic insulin has anything to do with either the oxidation of glucose or its formation into glycogen in the tissue cells, except that it makes possible the migration of the glucose molecule from the blood stream to the cells, by the aid of the inorganic phosphates, and in the cells other agencies take care of both oxidation and glycogen formation. It is therefore illogical to use either oxidation (R.Q.'s) or glycogen formation as yardsticks to the action of pancreatic insulin. I like the method of C. F. and G. T. Cori in the investigation of this question:

only they did not study the beginning of insulin action which takes place when the insulin first meets the glucose molecule in the portal blood. They have studied biopsy specimens of liver for glycogen, and blood sugar data in the hepatic vein, neither of which effects, as I have said before, can be ascribed to pancreatic insulin alone. They should study the formation of hexose phosphates and other phosphorus compounds in the portal blood immediately following discharge of insulin into it following a meal. Fasting experiments here are no good. And while speaking of the pancreatic insulin let me call attention to the fact that only a part of the pancreatic insulin enters the portal system, for quite a considerable portion of it is secreted into the intestinal canal and absorbed by the lymphatics, which carry it to the general circulation by way of the thoracic duct. This has recently been satisfactorily shown by Boldyreff¹ and Biedl² and Schaefer³.

For this reason it can be seen that much pancreatic insulin reaches the general circulation without passing through the liver; and I hope that none of our physiologists will overlook this important fact. For instance, this insulin, which has not passed through the liver and been subjected to all the marvelous theoretical influences which have been ascribed to it, acts upon the glucose in the general circulation, and this is the glucose which enters the muscles and forms muscle glycogen. Although I cannot see that there is any difference in the glucose which enters the liver or which enters the muscles, since both have been acted upon by pancreatic insulin, there are great differences in what happens to the glucose

itself after entrance. In both organs the glucose is oxidized and some of it converted to glycogen. But in the liver these two functions are performed simply, just as they are in practically all other tissue cells, or in the simple cells of lower animals. In the muscles, however, through contractions, anaerobic conditions are produced through temporary constrictions of the blood vessels which carry the oxygen supply, and under such conditions with a slightly alkaline blood current, as Lusk has shown, glycogen changes to lactic acid and some of it re-synthesizes to glucose and finally glycogen again following contractions. Now in this process I can see no action of pancreatic insulin. The whole process is a chemical one, and the only action of pancreatic insulin is to prepare the glucose in the blood stream for entrance into the muscle cells, thus supplying glucose to the muscles but having nothing to do with its later fate. Later on I may attempt to show that the insulin of the muscle cell (cellular insulin) takes part as an enzyme in the formation of muscle glycogen (and all other glycogen).

In the liver the action of insulin in the metabolism of glucose is much simpler, and why shouldn't it be? The liver is simply a huge mass of tissue cells, pierced by many blood vessels, some, as the hepatic artery, bringing blood from the general circulation, and some, like the portal vein, bringing blood loaded with food from intestinal absorption. In this immense living laboratory of tissue cells, this mixing pot of body fluids, many wonderful chemical reactions take place, some purely chemical and others under enzyme influence; and of these processes the oxidation of all food products easily takes first place. There is no mystery to this, except what we ourselves have created. In the liver we find the first point for the oxidation of the digested food; the first point for setting free the vast energy contained in the food; the first really important point of departure of all metabolism. So that it is at this point when the portal blood mixed with insulin enters the liver that we must begin our investigation of the action of pancreatic insulin. In normal individuals, or animals, the volume of sugar is much greater in the portal vein as it enters the liver than in the hepatic vein as it leaves the liver, showing that much glucose has left the blood vessels and has been retained within the liver cells. This is in normals, but in severe diabetics or in depancreatized dogs not treated with insulin, the blood

sugar levels in the hepatic vein and the portal vein are very nearly equal, showing that little or no sugar has migrated from the blood to the liver cells. This should convince any reasonable scientist that the first effect of insulin is to cause the migration of glucose from the blood vessels to the tissue cells, but if he is not convinced let him inject a sufficient quantity of insulin into the depancreatized dog and then test the blood sugar in the hepatic vein. But it is an established fact of physiology (Macleod) that the inorganic phosphates also leave the blood stream under these same conditions, and what is more, in proportionate amounts to (Macleod, Noble) and at the same time as the glucose, suggesting a chemical union of the two, either as hexose phosphates or some similar compound with phosphorus. These are established facts and, moreover, they explain the immediate fall of the blood sugar following the injection of pancreatic insulin, whereas this fall cannot be explained by oxidation of glucose since it also is an established fact (Macleod) that the respiratory quotient does not rise for one to two hours after the injection of insulin. From the preceding facts, then, we can state definitely that the first action of pancreatic insulin after its discharge from the pancreas is upon its substrate glucose in the blood stream; that this action causes the migration of glucose from the blood to the cells; and that such migration is accompanied by a proportionate departure of the inorganic phosphates from the blood suggesting the formation of some glucose-phosphorus compound, as the result of such action of insulin. Furthermore, there is no evidence which will stand criticism that pancreatic insulin has any other function than this. The fall of the blood sugar occurs immediately after the injection of pancreatic insulin, but the other well known acts of carbohydrate metabolism, viz., the oxidation of glucose and the formation of glycogen, take place from one to two hours after the fall of the blood sugar, and all this happens in the tissue cells and not in the blood into which the insulin was discharged.

Cellular Insulin

There is, however, still another insulin in the body besides the pancreatic, despite the opinion of Prof. Best to the contrary, evidence as to the existence of which I will present before showing its influence on the formation of glycogen in the cells. It is acknowledged generally by scientists that

some form of insulin must be present in all animals if glycogen is to form; that this must be in sufficient quantity; and that if it is not in sufficient quantity the deposit of glycogen will be proportionately reduced. We said simply insulin, but I am prepared to show that two kinds of insulin are required for the formation of glycogen. First, the pancreatic insulin which enables the glucose (and phosphorus) to be transported from the blood stream to the cells; and second, the insulin of the cells themselves, which, acting upon glucose as an enzyme with both a direct and reverse action, which is common to enzymes (Gortner), may either synthesize glucose to glycogen or reverse the action by hydrolyzing glycogen to glucose at will.

Although Prof. Best has been unable to extract any substance from any tissue, except that of the pancreas, which will give the biological tests for insulin, this is but negative evidence, and probably other men and other methods will be more successful in future time as they were in the case of pancreatic insulin, for there are many indirect evidences which point strongly toward the existence of insulin in the cells. So much so, in fact, that a scientist of equal eminence with Prof. Best has assured me, in a confidential communication, of his great interest and almost belief in such an insulin.

I shall offer the following evidence in support of this insulin:

1. Glycogen is found in every animal cell (Macleod).
2. Macleod found glycogen in the muscles of depancreatized dogs (Old Style).
3. Soskin found glycogen in dogs 3 or 4 weeks after pancreatectomy (New Style) and withdrawal of insulin.
4. Houssay found glycogen in dogs several weeks after both pancreatectomy and hypophysectomy.
5. All animals below vertebrates lack a pancreas.
6. The level of the blood sugar is lower in the veins of normal human beings than in the arteries. Explanation: After the glucose of the food has been acted upon thoroughly by the pancreatic insulin a certain level is attained in the arterial blood. Now this glucose leaves the blood vessels (capillaries) and enters the intercellular spaces and thence seeps through the cell membrane into the cell. Therein the two processes of oxidation of some glucose and the conversion of some more

into glycogen take place, and the remaining solution returns to the veins; and in the venous blood we find a distinctly lower sugar level, showing that a certain amount of sugar has been either oxidized or retained as glycogen or as both in the cells. Since all agree that glycogen cannot be deposited except when insulin is present, we are bound to conclude that we are now in the presence of another insulin which can form glycogen.

From the above facts I deduce the conclusion that glycogen is formed in the cells by the action of an enzyme which I call cellular insulin acting upon its substrate glucose. However, the fact that glycogen is formed in the cells by some such enzyme—and all agree that glycogen cannot form except in the presence of some form of insulin—leads me to conclude that a cellular as well as a pancreatic insulin is required in man for complete carbohydrate metabolism.

Summary

Pancreatic insulin enters the portal system directly from the pancreas; but a considerable portion of it which is discharged into the intestines is absorbed therefrom and carried by the thoracic duct into the general circulation without passing through the liver.

Pancreatic insulin acts upon the glucose molecule in the blood stream in such a way as to cause its union with inorganic phosphates in a glucophosphorus compound which migrates rapidly from the blood stream and causes the immediate fall of the blood sugar. There is no evidence that pancreatic insulin performs any other act in carbohydrate metabolism. It is an agent in the transportation of glucose from the blood to the tissue cells. Without it glucose cannot leave the blood vessels (except of course in small quantities by osmosis). Glucose and inorganic phosphates always disappear simultaneously and in proportionate amounts from the blood following an injection of pancreatic insulin.

Cellular insulin, although not yet demonstrable by extraction, undoubtedly exists in every animal cell. It is to this enzyme that we must attribute the alternate synthesis and hydrolysis of glucose to glycogen and glycogen to glucose in all tissue cells. The reversible reaction of enzymes is well recognized in both plant and animal life, and it is generally acknowledged that no glycogen can form in the absence of insulin.

Although neither one of the insulins exerts any direct influence upon the oxidation of glucose, indirectly the pancreatic insulin is absolutely necessary for it, because if the glucose cannot be transported to the cell, then no oxidation can take place; so that all the chief acts of carbohydrate metabolism are absolutely dependent upon the ability of the pancreatic insulin to bring about the transportation of the glucose to the cells. It is therefore easy to understand why a deficiency of pancreatic insulin always causes the diabetic syndrome. Pancreatic insulin undoubtedly helps the oxidation of glucose also by transporting the

mineral catalyst phosphorus united with the glucose molecule.

The insulins are not hormones but enzymes which attack a definite substrate glucose; the pancreatic insulin makes this glucose transportable from the blood to the cells; and the cellular insulin converts excess glucose into glycogen in order that it may be stored or used to produce muscular work.

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BILATERAL ARTIFICIAL PNEUMOTHORAX

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pleural fluid on one side but is doing well.

The contention is therefore supported that bilateral simultaneous artificial pneumothorax can be employed in advanced pulmonary tuberculosis complicated by tuberculous enteritis or skeletal tuberculosis, or associated with diabetes, with considerable benefit.

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RESULTS OBTAINED BY THE USE OF FEVER THERAPY IN THREE TYPES OF CASES USUALLY REFRACTORY TO OTHER TYPES OF TREATMENT

M. HILL METZ, Dallas, Texas (*Journal A. M. A.*, May 9, 1936), treated six patients with the most severe type of Sydenham's chorea with fever therapy by means of the Kettering hypertherm. All were girls and their ages ranged from 8 to 15 years. They had been kept at complete bed rest and had been treated with all the ordinary measures and with much sedation but the condition remained of the most violent type, requiring continuous restraints to prevent self injury. All were given from three to five treatments at weekly intervals, each treatment consisting of from three to four hours, with temperature between 106 and 107 F. Shortly after the first treatment in each case there were fewer choreiform movements, and the patients rested with fewer sedatives. Improvement was slow but definite, and in from two to four weeks after the last treatment all involuntary movements had disappeared and the patients ate and slept normally. In only two cases was there the suggestion of choreiform movements under the stress of excitement. These cases have been followed for from two to eight months, and there has been no recurrence of symptoms in any. Excellent results were also obtained in two severe cases of gonorrheal ophthalmia in May 1935. Eight cases of severe intractable bronchial asthma were also treated with fever therapy by means of the Kettering hypertherm. Multiple sensitivities to bacteria, foods and pollens were present in each case. All patients had had severe attacks of status asthmaticus at repeated intervals, oxygen therapy having to be administered.

HEADACHE: THE NEUROLOGICAL ASPECT

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IN CONSIDERING the causation of headache it is of the greatest importance that convincing evidence has been brought forth to indicate a neural regulation of intracranial blood supply and the formation of cerebrospinal fluid. Neurosurgeons have disproved the long held belief that headache is due to distention, stretching or other changes of the dura mater, for a patient under local anesthesia is insensitive to various stimulations of the meninges and cortex. Painful responses are obtained only when the blood vessels in the dura mater, pia mater or brain are stimulated. Furthermore, a number of investigators have demonstrated, histologically, a rich network of nerve fibers in the blood vessels of the pia mater (Stöhr 1930; Hassin, 1930) and in relation to the vessels of the substance of the brain (Penfield, 1932; Stöhr, Deery, 1935). Penfield found that the intracerebral nerve fibers were continuous with those in the pia mater and of particular interest was the description of a rich network of nerve elements in the choroid plexuses (Stöhr). Only within the past few months (1935) Deery has described medullated nerve elements passing from the ependymal cells which line the ventricles and which according to Tilney may well be sensory in nature. In the light of this work the clinical study of Elsberg and Southerland in 1932 is of great significance. Utilizing the procedure of encephalography, they found that headache occurred most frequently when air entered the third ventricle and the lateral ventricles. The location of the headache appeared to depend on the position of the head.

The presence of these intracerebral vasomotor reflexes "would therefore be a mechanism whereby sudden changes in the amount of fluid secreted by the choroid plexuses might be produced by many nervous influences, and in a great variety of conditions." This not only sheds light on the etiology of headache in a number of conditions, but also helps to explain, theoretically, at least such cases as the one reported

by Nonne of a young healthy individual who as a result of a severe emotional shock, the violent accidental death of his young wife, suddenly developed severe headache, vomiting, choked disc, and stupor. Autopsy failed to reveal any evidence of a pathologic process in the brain other than a slight increase in the size of the ventricles and congestion of the brain.

A further important contribution to the solution of the problem of headache has been the work done on intracranial hydrodynamics. The cerebrospinal fluid is considered as a dialysate from blood plasma (Freemont-Smith), and in its circulation is conceived as passing through the ventricular system, the foramina of Magendie and Luschka to the large cisterna at the base, and then over the hemisphere in the frontoparietal region to reach the large pachionian structures which function as large filter beds. The excess fluid is restored into the venous channels and large sinuses of the dura which are in relation to the pachionian bodies and any pathologic process interfering with its proper circulation may produce an excess accumulation of fluid that would disturb the intracranial volume relationships and produce symptoms.

The factors responsible for headache therefore resolve themselves into (1) a direct involvement of the vascular pain nerve network by processes of vascular distention and (2) by the influence of traction and stretching on the pain fibers resulting from an increased pressure in the subarachnoid space and ventricles (the pressure headache). By determining the type of headache ("hyperemic") ("pressure") certain definite and logical therapeutic measures may be instituted.

From the clinical standpoint headache may roughly be considered as due (1) to local disease originating within the skull, (2) to causes arising primarily from without the skull, (3) migraine, (4) psychogenic.

Under the first heading are various pathological processes of the meninges, vasculature, and expanding lesions in the cranial cavity. Of the meningeal lesions one should

Presented before the Medical League, Feb. 24, 1935.

mention the somewhat unusual acute benign lymphocytic meningitis, or (1) acute lymphocytic meningitis, a condition which resembles poliomyelitis and is often ushered in by an upper respiratory infection with signs of mild meningeal irritation and a pleocytosis of the spinal fluid: (2) pseudotumor cerebri or arachnoiditis which presents all the symptoms of a mass lesion: (3) otitic hydrocephalus which is presumably due to an excessive production of cerebrospinal fluid without showing an increase in number of cells and occurring during the course of an acute suppurative otitis media or mastoiditis. The headache resulting from these groups of conditions is of the "pressure type" and the important findings are those of increased intracranial pressure. Spinal drainage and "dehydration" promptly relieve the symptoms.

Headache due to such expanding lesions in the brain as tumors, abscesses, and cysts usually shows as a prominent symptom a constant dull head pain with superadded paroxysms of agonizing intensity. The headache occurs on awakening in the morning, or during the night, and may be localized or diffused. It is often accompanied by dizziness and vomiting, and is intensified by sneezing, coughing or straining. Occasionally the headache is unilateral and located over the site of the lesion. Percussion of the skull may even elicit focal tenderness and a change in note may be induced. The headache and the other symptoms vary and depend not so much on the lesion per se, but rather on the character of the lesion and its intracranial relation to the blood vessels, cerebrospinal fluid system, and intracranial volume relationships. Edema, congestion, and proliferative reactions of the surrounding brain tissue about the foreign growth account for the variability, remissions and exacerbations of the symptoms.

As long as there is a compensating mechanism present for the pathologic process there will be few if any symptoms. For instance, in patients with cerebral arteriosclerosis, headache and other subjective complaints may be entirely absent even when the change is extensive, possibly due to some atrophy of the brain, thus allowing for the increase in the pressure.

It is well to emphasize headache as an important symptom in tumor of the brain in children. The usual lesion, the medulloblastoma of the cerebellum, produces the most intense internal hydrocephalus so that

when the diagnosis is ultimately made the child is invariably blind. Every child complaining of failing vision and headache should be considered as a tumor suspect and a careful fundus examination made.

Headache following head trauma may be due to many causes; hemorrhage into the meningeal spaces and the posttraumatic concussion syndrome are the more important. It should be mentioned that subdural hematoma may result from a mild injury to the skull; the accompanying headache gradually increases in intensity for days, weeks and months and is associated with other symptoms of increased intracranial pressure and focal signs. The problem is entirely surgical. The headache in the post-concussion syndrome is usually described as a dull, aching, throbbing or pressure sensation. It may awaken the patient from a sound sleep, is frequently associated with dizziness and is produced or intensified by quick movements such as arising from a recumbent position. The patients show an unusual sensitivity to sunlight, (photophobia). Although psychogenic symptoms may be present, this syndrome is frequently due to organic changes such as edema, congestion, and ganglion cell disease and often meningocerebral adhesions can be demonstrated by the encephalogram. Temple Fay has been successful in lessening this complication by his "dehydration" method following head trauma. Penfield reported 17 cases of this type of headache that were greatly benefited by lumbar air insufflation.

Headache due to other intracranial conditions is a frequent occurrence and as a symptom of encephalitis and other infections is probably due to an infiltration of the perivascular lymph spaces causing widespread circulatory changes and edema. In spontaneous subarachnoid hemorrhage the prodromal symptoms may consist of diffuse headache and dizziness; however, in a number of cases the description given by the patient is that of sudden onset, without warning, of bursting pain in the head like a pistol shot and so forceful as to throw the individual to the floor. The pain is diffuse, intense and made worse by movements of the head. The head is held rigid and there is increased tension of the muscles of the neck. meningeal signs, fever, and the spinal fluid is bloody. Repeated lumbar punctures until the fluid becomes xanthochromic usually relieves the symptoms in uncomplicated cases.

Cerebral vascular disease may cause headache, particularly in the presence of hypertension. Frequently headache and dizziness may be the prodromal symptoms of a beginning apoplexy. The pain in this condition as well as in uremia, passive congestion secondary to heart disease, alcoholism, etc., is caused by overdistention of the blood vessels affecting directly the vascular pain fibers.

That headache due to extracranial conditions may result from the transmission of pain impulses by the vegetative nervous system is of great importance to the problem. The sympathetic and parasympathetic systems by their central connections can transmit afferent impulses from practically all the viscera and produce reflex headache.

Headache may be due to disease of the bones of the skull. The pain resulting from the accessory sinus disorders has been shown to be transmitted by the trigeminal nerve.

A rheumatic myositis of the occipitofrontalis muscles can produce severe headache and is frequently overlooked as a causative factor. The pain in these cases is due to an actual tenderness in the scalp and the neck, and occasionally one can palpate Heberden-like nodes, usually at the insertion of the muscles. Massage, local heat, and salicylates internally very often relieve the pain.

There are a number of symptomatic headaches, the mechanism of which is difficult to explain, such as those due to eye strain, mental fatigue, etc. It is pointed out that a neural mechanism cannot explain this type of headache. However, recent work with the electro-encephalogram and observations through operative wounds in the skull may eventually furnish an explanation for even this type of headache. For instance, it has been shown that the act of reading a newspaper is associated with a focal hyperemia in the occipital lobe that can be directly seen. A constitutional susceptibility to pain stimuli may be an added factor.

Migraine: Riley in 1932 summarized our knowledge of this subject up to that time and much research has been done since then. The causative factors may be either endocrine, toxic, or allergic. The latter fits in with the condition described by Kennedy, of localized cerebral edema in response to

specialized sensitization. The symptomatology may closely resemble a mass lesion in the brain.

Ergotamine tartrate ampule solution injected hypodermically in 0.5 cc. to 1 cc. doses at the beginning of an attack or even at the height of an attack has proved of greatest value in preventing and relieving seizures. The oral use of this drug in doses of two tablets repeated once or twice at intervals of one to two hours has been of particular benefit to male adults and in mild cases. In certain patients with marked autonomic derangement and in whom this disturbance is apparently a factor in the causation of migraine, a combination of this with certain other drugs has been of distinct value in preventing seizures and in correcting the nervous dysfunction. Each tablet contains ergotamine tartrate 0.0003 Gm, the levorotatory alkaloidal complex of belladonna 0.0001 Gm., and phenobarbital 0.02 Gm., and therefore produces sedation of the entire neurovegetative system. Bickel regards this preparation as the therapeutic agent of choice in migraine and says that in this condition the acute seizure is generally characterized by a sympathetic hyper-tonia, whereas the early symptoms are often parasympathetic in type.

Although the neuralgias are not considered under the classification of headaches, there is the so-called atypical neuralgia that frequently takes the form of a severe headache. That this is not due to the fifth nerve or other cranial nerves has been definitely shown by Fay, who operated seven times on a patient with this syndrome. After sectioning the 5th, 9th and 10th cranial nerves and the first and second cervical nerves, he proved that the pain was vascular in origin and that the pain fibers left the skull and entered the spinal cord as low as the fifth thoracic segment. He has described tenderness over the carotid artery which he calls "carotodynia" and also tenderness over the facial and subclavian arteries in this condition. Recently this syndrome has been studied by Brickner and Riley, who term the condition "autonomic faciocephalgia." They show that some cases of atypical neuralgia are really examples of atypical migraine. They emphasize that all these cases possess in common unequivocal evidence of autonomic derangement. They group their cases according to the responses obtained by epinephrine and ergotamine tartrate, since they found

that each drug may prove beneficial in certain cases.

In psychogenic headache the pain may be of the "steel band" or frontal helmet type, very severe and often described as a heavy weight on the vertex of the skull. Headache is a particularly common complaint in neurasthenia; in hysteria it is often intense and agonizing, the patient complaining that a nail or hot iron is being driven into the skull. The headache in these conditions may be likened to the transference symptoms referable to any of the viscera. The treatment consists of psychotherapy and like all other symptoms of visceral dysfunction produced by emotions, the writer has found the belladonna, phenobarbital and ergotamine combination a splendid adjunct in their treatment. This drug will cause a relaxation of the spastic condition in the viscera and blood vessels so commonly present in disturbed emotional states.

The control and treatment of headache will depend entirely on its cause. Every case should be carefully studied in order to determine, if possible, the mechanism producing the pain, particular effort being made to determine whether it is primarily vascular in nature, ("hyperemic") or due to increased fluid in the ventriculo-subarachnoid system.

In the analysis of headache as a symptom of intracranial lesion, the following routine should be carried out: obtain a careful history; conduct complete physical and neurological examinations; obtain reports on blood and spinal Wassermann tests; perform careful fundus and visual field studies; make a lumbar puncture with the patient in a recumbent position with manometric readings of the pressure, and finally, examine by encephalography or ventriculography in selected cases.

In the treatment of these cases it should be recalled that caffeine hypodermically reduces intracranial pressure; amyl nitrate and morphine and its derivatives cause a marked increase. One should be careful in the use of these two latter drugs in cases of hypertension and increased intracranial pressure for not infrequently aginal attacks occur in patients with hypertension. Amyl nitrite given for the relief of this cardiac condition should be used with the utmost caution, since it produces the most

marked vascular distension, increasing intracranial pressure and may cause death by inducing a cerebral hemorrhage. Morphine and its derivatives should also be used with great caution in the presence of increased intracranial pressure. The maniacal symptoms that occur following head trauma and the exacerbations in the mental symptoms of certain cases of coronary occlusion and toxic states can possibly be explained by the marked increase in tension caused by these drugs.

The treatment of "pressure" headache depends on an understanding of the principles of craniovertebral hydrodynamics and volume relationship between the various structures in the cranial cavity. Those interested in this subject are referred to the work of Temple Fay and others. Fay has shown that limitation of fluid intake to 20 oz. daily will definitely diminish the production of spinal fluid so that a dry tap by lumbar puncture may be obtained. This, together with active "dehydration" by the use of magnesium sulphate by bowel and 50 per cent glucose intravenously and at times spinal drainage, is an important measure in the treatment of the pressure type of headache even in the presence of expanding lesions in the brain. Reference should be made to the work of Masserman, who found that the fall in cerebrospinal fluid pressure due to hypertonic dextrose is followed by a secondary rise above the basic level, thus aggravating the symptoms of increased intracranial pressure. Various observers (Bullock, Gregersen and Kinney in the physiological laboratory and Murphy, Katz and Hirschberg by clinical studies) have shown that 50 per cent glucose causes a prolonged and pronounced reduction of spinal fluid pressure without the secondary rise. Binger uses 25 per cent solution of glucose with 3 per cent acacia with good results.

Finally, a word on the use of drugs for the relief of symptomatic headache. This can best be expressed in the words of Foster Kennedy: Acetanilid is a poison and bromoseltzer a menace. Acetylsalicylic acid, acetphenetidin and caffeine citrate are harmless to nearly everyone in ordinary dosage. Pyramidon (amidopyrine) can cause agranulocytosis. Phenobarbital helps the nervously strained. Exercise is good and perhaps a tranquil mind is best of all.

2028 PINE STREET.

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THE PROBLEM OF SEXUAL STERILIZATION OF THE MENTALLY DISEASED AND DEFECTIVE

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THE importance of the problem of mental deficiency is readily and clearly indicated by the following facts and statistics. Latest reports show that over 80,000 new patients are admitted annually to state and private institutions for the insane in the United States. It has been calculated that four to five per cent of the entire population will be in such institutions at some time during life, and that the percentage of persons who are actually or potentially psychotic must be put at ten or twelve million of the American population; yet these figures do not include the psychoneurotics of whom there are many more millions. Thus, when young people reach adolescence the chance is one in ten that at some time in the future they will actually be incapacitated for work by a mental disease. It is worthy of note that there are more beds in mental hospitals in the United States than in all other hospitals put together. Of twenty-four million school children in the United States, over one million, or four per cent, are destined to be blighted by mental diseases unless prevented.

To continue with a few more statistics, it has been estimated that there are from 40,000 to 60,000 feeble-minded individuals in Massachusetts, and 500,000 in the United States. These, however, are not accurate figures, and the probability is that the percentage is even higher. It has also been estimated that there are about 18,000 epileptics in the State of Massachusetts, and probably over 360,000 in the United States. Concerning the criminal insane and those with psychopathic personalities there are no good statistics, but we can ourselves appreciate how large a group they really must include.

It is obvious, then, that mental disease, under which I classify the insane, the feeble-minded, the criminal insane, the mentally defective and mentally deteriorated epileptics, and the psychopathic personalities, constitutes a grave and far reaching social and economic problem. There is general agreement that it is imperative that something be done to arrest the indiscriminate propagation of these

groups, and it has been suggested by many students of racial progress that human sexual sterilization would be a solution to this problem. Before we determine how much or how little value there is in this method of solving our problem, an explanation of exactly what is meant by sterilization might be of interest at this time.

To begin with, by the methods now generally employed, sexual sterilization has no effect on the personality or sex life of the individual, that is, there is no lessening of sex feeling; and if the patient has not been informed of what has been done, he or she will have no subjective or objective indications that a sterilization has been performed, other than that conception cannot take place. No organ is removed in the operation, which in men requires but five or ten minutes under local anesthesia and a couple of days in bed, and in women requires general anesthesia, hospitalization, and a few months of precaution with respect to difficult work, heavy lifting, etc. In men the operation is known as vasectomy, and in women as salpingectomy.

Returning now to a few more figures, the first statute for sexual sterilization was passed in 1907 in Indiana. Today there are twenty-six states in the union, not including Massachusetts, which have adopted laws authorizing sterilization. More than 15,000 individuals, about one-half of whom are residents of California, have been sterilized under these laws. Also, a few foreign countries among which are Denmark, Germany, and Finland have passed such laws.

The questions that now arise to mind are as follows: What social, economic, psychologic, and eugenic values are there really in human sterilization? Will it mean a solution in effecting the elimination of the mentally diseased or defective from society? Have we the right to decide who shall or who shall not be sterilized? All of us are cognizant of the fact that there is a continuous curve of variation in mental power and social capacity and social behavior from the idiot to the normal person, and that the mental defective cannot,

or ought not, to be regarded as a person separated by a gulf from the so-called normal group of individuals. Most psychiatrists are in accord in concluding that *anti-social* conduct is not an essential characteristic of mentally defective persons, and that there are large numbers of feeble-minded persons whose behavior in the community is no more reprehensible, either socially or sexually, than that of persons who are not classed as mentally defective. Of course, the insane are not to be included in this category.

Why then sterilization? I shall present both sides of the question and allow my readers to decide for themselves.



Most students of race culture, among whom are chiefly the eugenisists and sociologists, advocate sterilization of mental defectives for the following reasons: Because they are a detriment to society in that they reproduce very rapidly, that their behavior is undesirable, that they are an enormous economic load upon society, that they are persons with constitutional character defects, that they represent an unstable and explosive element in our society, and finally that they are a dangerous diluent of public opinion. The eugenists claim that poor heredity is the greatest single cause of mental deficiency, and since permanent segregation of such individuals in state homes and hospitals is cumbersome, expensive, and in many cases impossible, sterilization of all the feeble-minded would stamp out most of this group. They also claim that from investigation they have found that eighty per cent of mental defectives come from pronouncedly "neuropathic" stock. From this stock arise the psychotics, epileptics, and neurotics. However, this does not show itself in many descendants who are normal, but who are carriers, as it were, capable of tainting good stock. Then they state that sterilization of only 17 per cent is sufficient to extinguish an entire generation. They say, "What other means are available? There is no such thing as natural selection in civilized humanity, and isolation is too expensive. Marriage laws are a farce; laws against copulation with imbeciles would punish about one out of a thousand. Sexual union is a social service only when the partners are of social value. Therefore sterilization is our only proper and efficient method."

One of the major problems of the eugenists is to be found in the people who have not yet reached the back wards of a state institution, but who may do so eventually and who come of families that have contributed other members to these wards. It is in this larger group that voluntary, if not compulsory, sterilization is likely to find an extended application in the future, since they are very likely to bear children handicapped by defective heredity, and even if normal would be subjected to indescribable conditions of mental hygiene.

To sum up the diverse and seemingly irrefutable arguments of the proponents of sterilization, it can be stated that families with severe hereditary taints are propagated without check. It is difficult to restrict the propagation of persons with unsound hereditary characters. Such restriction is absolutely necessary for economic reasons, for the number of persons with serious hereditary taints who become criminals or a burden to the public is increasing. A diminishing number of persons capable of earning a living has to provide for an increasing number of economic incompetents. The prevention of reproduction among incompetents by permanent segregation in institutions is economically impossible, so that no other way is left than the elimination of their procreative power through sterilization for the welfare of the human race.

The arguments of the opponents of sterilization of abnormal persons are briefly as follows: First, those of a more scientific nature, to the effect that it is impossible to foresee with certainty the transmission of defects to posterity; that the laws of heredity and their application to man are uncertain; that the question whether or not the good effects of hygienic and moral reeducation can be transmitted to posterity is uncertain; and lastly, that if sterilization is to be restricted to the grave cases its aid will be negligible in the crusade against feeble-mindedness and degeneracy. These opponents claim that if every *known* mental defective had been sterilized twenty or thirty years ago, it would have made little difference in the number of defectives existing today; that if this operation should be really effective, it would have to be applied to many who are not known to be mentally deficient, but who carry the Mendelian factor for mental deficiency, insanity, etc. There are large numbers of such "carriers" of mental deficiency now at large

in every civilized community, but since they appear normal it is not practical to suggest that they be sterilized.

Still others claim that they do not favor compulsory sterilization because it constitutes a drastic negation of the right of self-determination. They state that there is a large percentage of mentally deficient who can be, and many of whom are, usefully employed in the community; and that the overzealous proponents of sterilization, who have not thought through the subject, will look upon it as a cure-all and attempt to apply it to all sorts of ends for which it is not and was never meant to be adapted, much as has occurred recently in Germany.

Referring to the feeble-minded, Dr. Neil A. Dayton, Director of the Division of Mental Deficiency in Massachusetts, writes as follows: "The mental defective may lack average characteristics in intelligence and in two or three other factors. However, in spite of these handicaps, it is remarkable to view his success in attempting to live an average life and in adapting himself to accepted social usages. Millions of this type have been successful and have never come to our attention; a few have failed, chiefly those presenting a combination of unfavorable characteristics. Around these failures have been built up the legend of the feeble-minded, that highly theoretical description of the supposedly dangerous mental defective. It is our duty to provide suitable training and supervision for all of these." An independent corroborative statement by Dr. Walter E. Fernald is that only five per cent of mental defectives have behavior disorders and delinquent tendencies, and of these only two per cent are serious. Dr. Fernald was world famous for his work with and for the feeble-minded.

When the sterilization bill was brought up in the House of Commons of the English Parliament, a physician and labor member attacked it on the ground that it was anti-working class legislation and attributed low grade defectives to poverty, for which according to socialistic doctrine the community is responsible. His remedy was segregation and, more important, *socialization*, or allowing a certain proportion of the mental defectives to rejoin the community under adequate supervision. Let me add that the law for sterilization was not passed.

These and many more are the arguments of the opponents of sterilization, and they

are not to be disregarded either. Many more forceful reasons could be given, but I have mentioned only those which are more or less reasonable and scientific.

Before expressing a personal opinion, it might be of interest to note what some of the modern and well known psychiatrists have to say about heredity in mental disease, etc. One states that too much stress has been laid on the rôle of heredity in mental disorders; that the truth of the matter is that very little, even of what is probable, is known of the inheritance of mental instability and almost nothing is firmly established. Another psychiatrist gives as the causes for mental defectiveness: first, inadequate home conditions; second, disease of the mother during pregnancy; third, damage to the child's head at birth; fourth, infectious fevers during infancy; and fifth, inheritance of faulty germ-plasm from ancestors. He summarizes by stating that *acquired* damage to the nervous system is probably a greater factor in the production of mental disease than is defective heredity. Dr. Abraham Myerson, Professor of Neurology and Psychiatry at Tufts Medical School, is of the opinion that feeble-mindedness is often due to actual cerebral injury, and that while there is a familial incidence of certain types, this is due to *injury* of the germ-plasm.

From all that has been stated above it appears that the more conservative attitude should be taken. The truth is somewhere between the two opposite points of view, with the conservative attitude favored a little. It is undoubtedly true that sterilization does have its value, but it does not appear that sterilization, even if made compulsory, would eliminate the mental defective from society. From the practical point of view, it seems that sterilization should be reserved for imbeciles and criminals by constitution, not because we hope to stop their propagation, but to prevent them from injuring society; *birth control* measures to be reserved for other defective persons. Sterilization is but one of the many measures that the state can use, and ought to use, to protect itself from racial deterioration. I feel that sterilization of the *recurrent* insane is desirable and justifiable both in the interest of the race and as a therapeutic measure which relieves them of the anxiety of child-bearing and maintaining a family. Every male idiot

should be either completely unsexed or sterilized, depending on whether or not he is a menace to society on account of attacks he might make on unprotected persons. In addition, sterilization ought always to be performed on the epileptic and criminal insane, when it can be shown that there is an hereditary tendency, which is not an easy thing to determine. In this way a certain percentage of cases of mental deficiency and insanity would be eliminated, but it is safe to say that the problem of defectiveness will always be with us no matter how much sterilization of the mental defective is performed. Thus, while I favor *selective* sterilization, I do not think that it is a panacea as a method of eliminating all of the mentally deficient. I therefore suggest a state program for the care of the defective, stating the procedures in the order of their importance. They are: first, their physical and mental examination; second, their registration; third, their education both in school and by forming special classes; fourth, their supervision and socialization; fifth, their segregation whenever necessary; and sixth,

their sterilization when considered advisable both by the psychiatrist and the parents or guardian. In these special cases the state alone should have the right to order sterilization, but then, only when the individual is a source of danger to the community. In addition to the above procedures I would like to add the proper and judicial use of the science of mental hygiene, which can often detect early cases and prevent many of the delinquencies and difficulties in which the defective individual might find himself. Properly applied methods of vocational guidance, also, would promptly divert children of low intelligence from somewhat intellectual pursuits to the useful handicrafts and avocations—of which there are many—as fall within the scope of their intellectual ability. It is not being too optimistic to state that by following out the above procedures much can be done to help both the mentally defective and society without resorting to the use of such a drastic procedure as sexual sterilization as advocated by so many investigators in this field.

105 HIGH STREET

Miscellany

"Tonics and, Said I, 'Tiffs'"

(Note—A "Tiff" is tea, tiffin, a draught of liquor, a fit of "peeve," a slight quarrel, lunch, food, a scent, to smell, sniff, 'n' ev'rything).

● Did you notice—and mark him well!—the new dress of the MEDICAL TIMES? (No. I don't feel like saying "format"). But Strike me Pink—what a new dress!—not a stitch of Red! Just true blue! A suit to suit all, for all occasions. I like it—shorts even—'n' bathing suit! I take it—ready to jump right in and save the day, or the General Practitioner now going down for the third time! Life saver! Look't 'im! Good Old Life Guard Editor. See—comes the MEDICAL TIMES to throw a line and a doughnut, and to plunge right in! Look at that breast stroke! What style. Good Old MEDICAL TIMES. Don't you just love it? Look fellows! Away out in front! It's a Tuxedo-like suit as well, as befits the journal's soup-to-nuts menu.

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LIPSTICK DERMATITIS

It has been known for some time that certain cosmetic preparations are etiologic agents in contact dermatitis, especially is this true of lipsticks.

In a recent investigation, as reported by the Journal of the A. M. A., patch tests were made on the arm of lipstick dermatitis sensitive individuals, and on the arm of control subjects. Each of the ingredients was applied separately and in combination. The perfume was the only positive factor giving vesicular and erythematous patches. Tests on various perfumes showed marked reactions to methyl heptene carbonate on the part of the sensitized persons and even on the part of some of the controls. Castor and musk reacted mildly.

These experimentations emphasized the necessity for prior experimentation on the part of the manufacturer. In addition, the report stated that there are no strictly non-allergic soaps. Some allergically active ingredients commonly found in soaps are oil of bergamot, boric acid, borax, cottonseed oil, formaldehyde, lanolin, lilac, saponated solution of cresol, mercury compounds, orris root, quinine, resorcinol, rice, phenol, and coconut oil, which may at some time or other cause serious disturbance.

A CONTRIBUTION TO THE ESTIMATION OF THE RESULTS OF MEASUREMENTS OF BLOOD PRESSURE TAKEN BY KOROTKOV'S SOUND METHOD

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WE all participate in the wide practice of measuring blood pressure when examining patients in the office or home and in clinics and dispensaries, or when examining healthy people selected for a given vocation, or when observations are made of the effect of sport, exercises, etc.

The measuring of blood pressure is widely used not only for practical purposes but also for the solving of problems which are of great theoretical interest, such as the problems of hemodynamics.

Thus, for instance, the data obtained by means of this method hold an important place in the study of the peripheric factors of blood circulation, which are assiduously studied at present in many countries, particularly in connection with the problem concerning the existence of the so-called PERIPHERAL ARTERIAL HEART. (M. V. Yanovsky and his school in the USSR; E. E. Cornwall in America; R. M. Wilson and C. B. Rossiter in England; Luisado Aldo and Roncato in Italy; Hasebroeck in Germany; Wibamo in Belgium and certain others).

It is hardly necessary to prove that the method of measuring blood pressure is likewise an important factor.

The present article gives an analysis of Korotkov's sound method of examining blood pressure, a method which has become very popular, particularly because of the facility of its practical application.

Although a large number of papers has been devoted to the study of arterial blood pressure, we cannot say that the question

has been at all satisfactorily elucidated. This is explained by the fact that the height of blood pressure is determined by a whole number of mechanisms, some of which are so far little known.

"The arterial blood pressure", says D. D. Pletnev, "is a complex biological factor, constituted not only by the force of pressure of the heart muscle but also by the condition of the walls of the vessels, the condition of the vegetative nervous system, the psychic sphere, etc."

When measuring the blood pressure according to Korotkov's method the condition of the vascular wall, which affects the vibration of the vessel, is of particular importance. It is the object of this paper to give an analysis of the component elements which form the sound underlying Korotkov's method of measuring blood pressure.

It is obvious that under the influence of the most varied causes (nerve-regulating, reflectory, brachial) there may be some deviations in the vibration of the vessel, which would immediately affect the range of the sounds, and, consequently, also the measure of the blood pressure, determined according to Korotkov's method.

Thus, for instance, there are cases in which the indexes of the blood pressure measured simultaneously on both arms are not the same, the difference between them being quite considerable.¹ Unexpected

¹ In M. W. Janovsky's clinic a case was described by Punin, where the difference in the maximum pressure on both arms varied from 50 to 70 mm.

Second phase: The acquisition of a murmuring character, lasting while the pressure falls approximately 20 mm. of mercury more.

Third phase: The replacement of the murmur by a sound becoming progressively louder and lasting during the next 25 mm. of pressure fall.

Fourth phase: The muffling of the sounds lasting while the pressure falls 5 to 6 mm. more.

Fifth phase: The disappearance of all sound.

¹ Editor's note.—The auscultatory method of determining blood pressure was introduced by Korotkov in 1905. The changes which these sounds undergo during decompression of the cuff fall into five phases, described by Wiggers as follows:

First phase: The sudden appearance of a clear sound, lasting for a fall of approximately 14 mm. of mercury.

changes in blood pressure, which may be observed now on one arm, and now on the other, in such cases when the measuring is repeated during several days, compel us to ascribe these changes not to the heart but to the changed conditions of the arterial vibration, which depend on the vascular tonality. A spasm of the brachial artery which makes the vibration of the vessel impossible, entirely excludes the application of Korotkov's method. Such a spasm may occur under the influence of a cold, or in some cases of hypertonic arteriosclerosis, etc.

Of great interest are also cases in which Korotkov's sounds are preserved even when the mercury of the manometer is at zero. Such a condition of the brachial artery, without affecting the index of maximum pressure, excludes the possibility of determining the minimum pressure by Korotkov's method.

This phenomenon was described for the first time in M. V. Yanovsky's clinic, where it was called the "endless tone", and was explained by the absence of tonality in the brachial artery, that is, by the permanent contraction of the vascular muscles, when the minimum pressure in arteries is determined only by the elastic properties of the vessel (M. W. Janovsky).

N. A. Kurshakov has shown that such a tone in the brachial artery may be observed not only in persons with an inadequate aorta, but also in persons who are weakened, cachectic or febrile, or recovering from serious illness. According to Kurshakov the presence of a similar "tone" in neurasthenic people indicates a "vascular neurasthenia".

Thus anomalies of Korotkov's sound phenomena may sometimes strongly affect the index of blood pressure when measured under conditions of rest.

This to a still greater extent applies to the interpretation of the changes in blood pressure which take place under dynamic conditions (muscular work), in particular, during so-called functional tests of the heart under measured physical strain.

Thus it has been found that the "tone" (the vibration of the vessel) which as mentioned above may be met with in certain patients, is also to be met with in healthy young people, for instance, after a run. The vibration of the vessel after a run of 30 to 50 meters continues on the average for about 3 to 5 minutes (L. P. Pressman).

How is this vibration of the vessel, that is, the retention of Korotkov's tones even

when the mercury of the manometer is at zero, to be explained?

Some authors (Conradi, Slonim, V. Farfel) identify this vibration of the vessel with the sharp drop of the minimum pressure and regard this phenomenon as an unfavourable symptom; they consider that in this case it is possible to assume that there is a paresis of the vessels of the abdominal viscera. However, this explanation is disproved by the heightening of the maximum pressure under muscular work, and also by the plethysmographical observations of Weber, which showed that under condition of work a narrowing of the vascular bed of the abdominal tract takes place under a simultaneous widening of the cutaneous, peripheral and cerebral vessels.

The vascular sound is still unexplored ground, which accounts for the fact that so far no explanation has been found for the contradictory data regarding the reaction of the minimum pressure in functional tests of the heart and vascular system under muscular strain.

Some authors maintain that in this case, according to Korotkov's method, the minimum blood pressure increases while others assert that it decreases or remains unchanged; and others again find both an increase and a decrease.

One would think that in order to clear up this question one would need only to compare the measurements of blood pressure taken according to Korotkov's method with those taken according to other acknowledged methods (for instance, the oscillometric method). In reality, however, as was proved by Gomez, of the Vaquez clinic, in his paper, there is no possibility of determining the minimum blood pressure by the oscillometric method under conditions of physical work.

In order to ascertain the changes which occur in the conditions of the vibration of the vessel ("tone"), and, consequently, influence the index of blood pressure when measured according to Korotkov's method (in functional tests of the heart under muscular strain), we have examined 506 persons, 87 of whom were healthy people whose cardiovascular system showed no appreciable deflexions from the norm, 278 people

¹ In view of the fact that the duration of the tone in these cases is on the average short (10 to 30 sec.), it can be detected only if the sounding of the brachial artery begins immediately after the completion of the muscular exercises, instead of measuring the blood-pressure.

who were suffering from so-called functional disorders of the heart and 66 people who had organic heart diseases. All of them were men of about the same age, 22 or 23.

The examination consisted in feeling each person's pulse and measuring his blood pressure according to Korotkov's method under conditions of rest. Thereupon the examined person made 15 squatting movements (in the course of 20 to 30 seconds), then his pulse beat was once more counted and simultaneously by means of a phonendoscope the vibration of his brachial artery was sounded.*

These tests were made under exactly the same conditions during morning hours, the temperature of the room remaining the same 14 or 15 degrees Centigrade). As a result it was found that the tone, detected by this method of sounding the brachial artery, could be heard even after this very slight physical strain in the case of approximately half of those examined. What is the reason then that in some cases after muscular exercises (15 squattings) there is a tone in the brachial artery, while in the other cases there is none? Which are the factors that originate the tone and determine its duration?

In analyzing the material our attention was immediately drawn to the fact that the tone was more often met with in those cases where the arterial blood pressure kept within the limits of the usual average norm or somewhat higher⁴, and, on the contrary, it appeared more rarely where the blood pressure was low.

Our figures show that in the group of healthy people with a maximum blood pressure varying from 100 to 120 mm. mercury, the tone in the vessel was observed in 43.2 per cent of cases; in the group with a blood pressure from 120 to 150, in 40.6 per cent; and among those with the maximum pressure below 100, in 16.2 per cent of cases.

This becomes still more prominent in cases of organic insufficiency of the mitral valve. Here, at a maximum pressure below 100 mm., which mostly is the result of a decrease in the energy of the left ventricle, the tone was not heard in a single case, while in the groups with a maximum pressure from 100 to 120 and from 120 to 150 the cases in which the tone was heard in the brachial artery amounted to 50 per cent.

*There was nobody with a maximum pressure exceeding 150 among those we examined.

However, this one factor, the strength of the left ventricle, is not sufficient for the formation of the tone. A certain frequency of the systole is also necessary. Table I shows that hemodynamic conditions are unfavourable for the formation of the tone both when the pulse is slow (below 60), and when it is too frequent (100 to 144 beats per minute).

Cases with slow pulse invariably showed an absence of the tone in the brachial artery in all our groups (table I).

Table I

Percentage of cases in which tone was heard

Pulse	Group: healthy persons	Group: stenosis of mitral valve	Group: insufficiency of mitral valve
Below 60.....	0 per cent	0 per cent	0 per cent
60 to 80.....	52.8 per cent	50 per cent	50 per cent
80 to 100.....	41.7 per cent	50 per cent	25 per cent
100 to 140....	5.5 per cent	0 per cent	25 per cent

It is remarkable that when the pulse varies from 100 to 140 there is a certain regularity to be observed in all the three groups represented in table I; the group of healthy people gave 5.5 per cent of cases in which the tone was heard; on the other hand, the group of organic mitral insufficiency, where, since the compensation was not quite complete, there was every reason to expect an increased energy of the left ventricle, gave 25 per cent of cases in which the tone was heard in the vessel. The same table shows that in the cases of stenosis of the mitral valve, where in accordance with the nature of the organic defect of the heart the muscles of the left ventricle are weak, no sound was heard in the vessel when the pulse frequency was very high.

Consequently, a frequency of the pulse varying from 60 to 80 and 100 beats per minute may be regarded as the most favourable condition for the appearance of the sound in the vessel.

Variations from the norm in regard to the sound of the vessel in functional tests are mostly expressed in the increased length of tone under muscular strain. After 15-20 squattings, the sound in the brachial artery may last 50-60 seconds and even more, instead of the average 15-30 seconds.

On examining Table 2 we find that in regard to length of tone persons with a definite functional cardiac disturbance held second place (11.1 per cent of all cases). We have placed in the group of people with a definite, so-called permanent form of functional cardiac disturbance all those who showed a shortened diastolic pause of the

Table 2

Healthy people	People with slight functional disturbances of cardiac activity	People with permanent forms of functional disturbances of cardiac activity	People with insufficient mitral valve	Duration of tone
28.9 per cent	36.1 per cent	17.2 per cent	25 per cent	Under 15 sec.
50.0 per cent	38.9 per cent	43.4 per cent	50 per cent	15-30 sec.
21.1 per cent	22.2 per cent	27.3 per cent	0 per cent	30-50 sec.
0.0 per cent	2.8 per cent	11.5 per cent	25 per cent	Over 50 sec.

heart and persistent systolic murmurs in all valves, sometimes of a blowing kind, without the classical symptoms inherent in organic mitral insufficiency (accentuation of the second tone of the pulmonary artery, a more or less pronounced extension of the borders of the dullness of the heart, etc.).

How is this considerable percentage of cases with tones of longer duration (over 50 seconds) in patients suffering from a functional cardiac disturbance to be accounted for?

Apart from the indicated factors, pertaining to the heart (such as the strength of the left ventricle, the adequate frequency of the systole, a certain frequency of the cardiac contractions), the duration of the tone may be influenced also by vascular factors.

Huchard in his clinical work long ago pointed out the rôle played by the peripheral vascular factors in the origin of functional disturbances of cardiac activity. He not only noted the contraction of vessels but also the rôle played by their dilation. In cases when the enlargement of vessels was connected with one or the other kind of cardiopathy, Huchard used the special expression, cardiovascular asthenia, which, in his opinion, is characterized by a slow and progressive weakening of the heart and vessels.

In cases of functional (so-called permanent) forms of disturbance of cardiac activity, combined with a greater period of the duration of the tone of the vessel, we must assume a cardiovascular asthenia (according to Huchard's terminology), the cause of which may be a variation from the norm in the tonality of the vegetative nervous system.

Research work undertaken by N. Ivanov and L. L. Pressman showed that in a number of cases the greater duration of the tone following muscular strain is caused by a dystonia of the vegetative nervous system.*

As soon as it became possible by certain therapeutic measures (iontophoresis of Ca, hydrotherapeutic procedures, etc.) to re-

store for a certain period of time the tones of the vegetative nervous system, the excessive duration of the tone, which characterized the functional test of the heart of these patients at the time they were admitted to the hospital, disappeared too.

These vegetative dystonias, which in functional tests with muscular strain have the effect of increasing the duration of the tone, may cause in the heart the appearance of so-called functional systolic murmurs.

The possibility of systolic murmurs in the heart originating in this way, to which attention was first drawn by S. P. Botkin, has been fully confirmed by the experimental clinical work of N. N. Savitzky, Tregubov and others.

Indications of variation from the norm of the tonus of the vegetative nervous system may be seen in the pronounced irregularity of breathing (vago-tony) observed in the case of 25.7 per cent of all the patients with functional disturbances of cardiac activity examined by us; in the case of healthy persons it was met with only in one out of a hundred.

Patients with so-called slight functional cardiac disturbances show not only greater but also shorter duration of tonality as compared with the tonality that may be observed in the group of healthy people.

This shorter duration of the tonality of the vessel is nothing but a symptom of the tendency of the vascular wall towards spasm. The heightened reaction of the vascular system of this group is in conformity with the increased debility of the heart, which shows itself in an increased excitability of the cardiac muscle and the presence of slight systolic murmurs which appear only after muscular movements and rapidly disappear.

In addition to the enumerated causes, blood pressure is also affected by impulses arising in the central nervous system. "Not one organ but the whole organism with all its complex psychosomatic setting responds to the functional test" (D. D. Pletnev, XII Congress of Therapeutical Workers).

One of these little known mechanisms of complex reaction of the organism is the

* For the determination of the tonality of the vegetative nervous system the author, along with the examination of vegetative reflexes, also applied pharmacological tests introducing atropin internally.

vegetative nervous system of whose rôle we have just spoken; another is the influence of the central nervous system. Emotional excitement, which undoubtedly takes place also during muscular work in functional tests, naturally affects also the cardiovascular system, sometimes calling forth sharp disturbances in the hemodynamics and, consequently, in the blood pressure. In view of the fact that the muscular work in functional tests with squattings does not last longer than 20 or 30 seconds, we must assume that the vascular reaction depends in the first place on the nervous factors.

The influence of the brachial factors, strongly pronounced during heavy muscular work, becomes less important in the cases of short strain. The influence of the central nervous system in such cases is shown by the experiments on dogs conducted by L. P. Pressman.

Studying the cardiovascular reactions of emotional excitation in a dog, L. P. Pressman found a distinct tone in the large vessels (hip artery). The tone appeared only in the case of emotional excitation and where there was no physical work.

And, lastly, what is the rôle of the constitutional factors in the formation of the tone?

On the basis of our material we may say that, in general, the percentage of people who have the tone is much greater in the case of normal* and hypersthenic people (in the group of healthy persons) than in the case of asthenic people. It is of interest to note that among asthenic people in the groups of persons with some cardiac variations from the norm, the percentage of people with the tone is higher than in the group of healthy persons, in other words that the nervous-vascular factor plays a much more prominent rôle in the formation of the tone than the constitutional factor.

In the light of all the above mentioned data it becomes clear why different authors come to such contradictory conclusions in regard to the reaction of the minimum pressure taken according to Korotkov's method in functional heart tests.

People in whose case the tone of the brachial artery is longer than usual constitute a group which, after the functional heart test, will show a more or less lowered minimum pressure. In this case the longer the tone of the vessel is retained after the

functional heart test with muscular strain, the later will the vascular tonality become restored, and by the time the minimum pressure is taken (that is approximately towards the end of the first minute) the minimum pressure according to Korotkov's method may be found to be lower. The stability or even the heightening of the minimum pressure may occur sooner in cases in which after a physical strain the tone (the sounding of the vessel) is short-lived or does not appear at all.

However, the study of the phenomenon of the tonality of the vessel under conditions of a functional dynamic test is of importance not only for the purpose of a more correct approach to the evaluation of the figures of blood pressure obtained according to Korotkov's method.

The sound of the vessel in itself, reflecting distinctly the slightest changes of vascular tonality, may be important for determining the functional condition of arteries. And this permits us to come closer to the understanding of that kind of disturbance of circulation in which the most prominent feature is the vascular insufficiency, the pathogenesis and symptoms of which are as yet very little known (hypotonia, hypertonia, arteriosclerosis, angioneurosis, etc.).

Conclusions

1. When determining the arterial blood pressure by the sound method of Korotkov the conditions under which the tone of the brachial artery is produced are of great importance. Changes in the tonality of the vessel affect the range of Korotkov's sound phenomena, and, consequently, the figures of the maximum and, still more, of the minimum pressure.

2. Cases have been observed when the Korotkov tones were maintained even when the mercury of the manometer was at zero (that is, when the brachial artery was not pressed by the cuff of the sphygmomanometer), and when, consequently, it was impossible to determine the minimum pressure by the sound method. The application of this method is also impossible during a spasm of the brachial artery, when there is no tone in the vessel.

3. According to our data the tone of the brachial artery, which may be determined by means of a phonendoscope, occurs in 50 per cent of healthy young people when they are given functional heart tests with definitely measured muscular strain (15 squat-

*The constitutional diagnostic is here based upon Pinner's index, by means of which the material was divided into three groups (hypersthenic, normasthenic and asthenic).

tings). The duration of the tone (the sounding of the vessel) varies in such cases from 15 to 30 seconds.

4. The tone appears in functional heart tests only when the systole is of a sufficient strength, the pulse of a certain frequency, and the vascular tonality to a certain degree weakened.

5. A considerable increase in the duration of the tone at functional heart tests (50 seconds or more) in the cases of persons with an average initial frequency of the pulse and without organic heart disease, is proof of a variation from the norm of the vascular tonality. It may depend on a vegetative dystonia and more often occurs in the case of people suffering from a functional cardiac disturbance.

6. The figure of the minimum blood pressure in measurements according to Korotkov's method during functional heart tests depends to a great extent on the duration of the tone (sounding of the vessel, caused by muscular strain); the longer the tone the lower will be the figure indicating the minimum pressure, and vice versa.

7. The method of sounding the brachial artery for the purpose of determining the duration of the tone, which appears in response to muscular strain (under conditions of functional dynamic tests), deserves notice and can be recommended along with other clinical methods while examining the functions of the peripheral arterial vessels.

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DEMENTIA PARALYTICA: RESULTS OF TREATMENT WITH A DIATHERMY FEVER

SAMUEL H. EPSTEIN, HARRY C. SOLOMON and ISRAEL KOPP, Boston (*Journal A. M. A.*, May 2, 1936), state that a review of the literature of the results of treatment of demential paralytica with fever produced by diathermy and related mechanical modes of hyperpyrexia indicates that, out of a total of 648 cases reported between 1929 and 1935, good remissions were reported in 27 per cent. In their series of thirty-three patients who were treated by diathermy between February 1931 and February 1934, according to their analysis made in February 1935, eight patients were improved and working, and an additional seven patients were improved but not self supporting. Four patients, while remaining hospitalized, were known to be improved. Four patients were living but unimproved, and ten patients had died. In one case there was a definite clinical and serologic relapse four years after the administration of diathermy fever therapy. Of the fifteen patients who were clinically improved, eight, or approximately one-half of them, had completely normal or nearly normal spinal fluids. It seems quite possible to the authors that their results in the total group of cases would have been much better if the diathermy treatment had been more prolonged and at a higher temperature level. The longevity figures based on the percentage of patients who died within two years after treatment indicate that 27 per cent of the diathermy series represent deaths which occurred within two years. This is contrasted with 14.8 per cent for the malaria series and 13.5 per cent for the trypanamide series previously reported. A comparative study of the clinical results among patients treated with malaria, artificial hyperpyrexia including diathermy, and trypanamide indicates that the best remissions are obtained in a little more than 45 per cent of the malarial treated cases and 42 per cent of the cases treated by trypanamide, contrasted with 27 per cent of the cases treated by artificial hyperpyrexia.

Clinical Notes

THE RELIEF OF MENOPAUSAL SYMPTOMS

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THE rapid strides that have been made in endocrinology in recent years have raised high hopes for the successful treatment of many hitherto perplexing conditions. Immediately following the work of Allen and Doisey with their oestrogenic substance, theelin, the market became flooded with numerous more or less potent preparations of oestrin.

Since the menopause and its distressing train of symptoms were thought to be due to waning ovarian function and the consequent lack of oestrogenic substance, the administration of this substance seemed the logical solution for this problem.

Geist and Spielman (1), Hamblen (2), Dodds (3), Werners (4), and others have reported series of cases in which women, suffering from symptoms of the menopause, were injected with preparations of oestrin, with rather good results in most cases. However, a fairly large percentage of the cases did not respond favorably; and, even in the successful group, symptoms recurred on cessation of administration.

Kurzrok (5) obtained favorable results only in those cases in which oestrin was absent from the urine and in which prolactin was present.

Fuller Albright (6), in his series, also demonstrated a hyperfunction of the anterior pituitary rather than absence of oestrin as the cause of menopausal symptoms. Collins (7) and his co-workers have recently arrived at similar conclusions. Tandler and Grosz (8), Engle (9), Evans and Simpson (10), and Fluhmann (11) have shown experimentally that castration and the menopause are followed by an increase in size and function of the anterior portion of the hypophysis.

Changes in other glands have been noted, notably in the thyroid and adrenals. There

is a definite hypersensitivity to adrenalin in menopausal women (Myers and King, 12) and many clinical evidences of hyperthyroidism (Maranon, 13).

From these facts it would seem that the withdrawal of oestrogenic substance does not of itself produce the disturbing menopausal syndrome, but merely initiates a marked change in the endocrine system (pituitary, adrenal, thyroid), which is responsible for the hot flushes, headache, nervousness, and joint pains.

Maranon (13), some years ago, emphasized the rôle of hyperthyroidism and its influence on the vegetative nervous system in the menopause. He said, "Physiologically this is one functional correlation which so links the glands of internal secretion with the vegetative nerves that clinically there is no endocrine syndrome in whose symptomatology numerous manifestations of sympathetic or parasympathetic disturbances are not found. This occurs, above all, in ovarian insufficiency and hyperthyroidism. Now ovarian insufficiency is the fundamental phenomenon of the menopause, and hyperthyroidism and hyperadrenalism are of the most constant. Thus the menopause is a state which will be particularly rich in vegetative symptomatology." Clinical observation confirms this. Most symptoms of the menopause simulate either the vagotonic or sympathicotonic syndrome or both.

Thus far, we have considered the endocrine and neurologic factors in the production of the menopausal syndrome. There is one other which is often of prime importance—the psychic factor. There is a tremendous psychosexual upheaval at the climacteric in some women which produces many of the nervous and even somatic symptoms. Most often this manifests itself in marked emotional instability and in

changes in sexual feeling. While the clinical picture of this critical period is quite variable, nevertheless, it is to a very great extent dependent upon the constitutional predisposition of the patient. Thus, numerous authors have emphasized that women who previous to the onset of menopausal symptoms were in an unstable nervous and mental condition or who suffered from chronic fatigue are prone to undergo a stormy menopause, and a nervous breakdown may result if they are not accorded proper management.

In view of all these complex facts in the pathogenicity of the menopause and because of the expense and occasional inefficiency of oestrin therapy, we decided to check the results obtained from the administration of a carefully selected and theoretically wholly appropriate sedative drug for the purpose of overcoming any underlying nervous instability.

For the stabilization of a neuropathic terrain, which often manifests itself by a combination of variable and indefinite symptoms of psychoneurosis and imbalances of the autonomic nervous system, Bickel (14) has pointed out the necessity of producing sedation of all the manifestations of nervous dystonia. For this purpose he warmly recommends a combination in tablet form, each tablet containing 0.0003 Gm. ergotamine tartrate (a sedative of the sympathetic and according to Rothlin (15) an antagonist of epinephrine), 0.0001 Gm. levorotatory belladonna alkaloids (a sedative of the parasympathetic) and 0.02 Gm. phenobarbital (a central sedative acting mainly upon the brain stem). This preparation therefore is a sedative of the entire neurovegetative system and seems particularly suitable in the menopause for the relief of symptoms due to nervous dysfunction.

In the past eighteen months, we have treated a total of twenty-one menopausal women with this preparation. The dosage varied from 3 to 5 tablets daily for three weeks followed by a rest period of one week with resumption of treatment when necessary. Five of the cases treated were castrates, in whom the menopause had been precipitated by operation three months to four years previously. One was a case of premature menopause, at the age of thirty-four. The remaining fifteen ranged in age from forty-three to fifty-four with the onset of the symptoms varying from one to ten years previously. All of the castrates, the premature menopausal, and eight of

the other group had received theelin with definite improvement, but in six of these cases headache and insomnia, which were salient symptoms, were unrelieved.

With the addition of the preparation cited, however, to the theelin therapy, these symptoms abated remarkably. In one of these cases pruritus vulvae was a prominent symptom and was greatly relieved after five weeks of this reinforced theelin treatment. Seven cases in the series, whose symptoms were rather mild, were treated adequately with the described tablets alone. The effect of this drug on the headache, nervousness, and insomnia of the menopausal woman was very striking and prompt. The hot flushes, however, seemed to be but little influenced.

Conclusions:

- 1st: The menopausal syndrome is not due entirely to the withdrawal of oestrogenic substance.
- 2nd: Hyperfunction of the pituitary, adenal, and thyroid is a definite factor to be considered.
- 3rd: The vegetative nervous system and higher cerebral centers are definitely involved in the menopause.
- 4th: Theelin alone is often inadequate and always transient in its effect.
- 5th: The combination cited, used alone or with theelin, is an effective therapeutic agent for the relief of the headache and nervousness of the menopause.

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THE EXTERNAL EAR AND MUSIC— AN OBSERVATION

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IN a recent report of the Smithsonian Institute, it is stated that certain human features change in size with senility (1). It is mentioned that the nose, ears, mouth, etc., enlarge as we get old. In 1908, under the auspices of Dr. William Browning and in association with Dr. Frederick C. Eastman, the writer investigated a large number of persons in almshouses, foundling asylums, children's hospitals and dispensaries with the idea of ascertaining the size of ears in special relation to age (2). It was definitely noted that as people become senescent the ears grow away from the bony skull and apparently the length of the ear follows similar proportions. It was thought the cause for this fact is that the subcutaneous fat behind and around the ear is absorbed, leaving the lobe thinner and longer and making the cartilaginous portions more prominent.

Since that time, the writer has kept measuring a large number of persons and has noted that those with musical trends have larger ears than others. By those with musical trends are meant persons who either make their living by playing a musical instrument or singing or composing or instructing in music, also those people who state that they are especially fond of music. Of course, to be scientific, millions of persons in all sorts of climates and conditions would have to be examined and this small number would be open to variability and much error.

The figures represent measurements of 2000 adults which were taken in a course of ten years in institutions, from private patients and other acquaintances. Only three measurements are offered—the first is the longest distance from the highest point on the helix to the lowest point of the lobule. This we call the vertical distance or length of the ear. The second measurement is the greatest length from the helix to the temporal bone. This we call the anterior-posterior distance. The third measurement is

from the tip of the tragus to the outer rim of the helix. This we call the width of the ear. The average length is $6\frac{1}{2}$ cm. The average anterior-posterior distance is $2\frac{1}{2}$ cm. and the average width is $3\frac{1}{2}$ cm. In general appearance it seems that the female ear is smaller than the male, but in actual measurement, the average length and width showed only $1\frac{1}{2}$ cm. difference in the two sexes. We found no real variances whether the musical person were a conductor, a singer, a writer or if engaged in either classical or popular music, or simply was very much inclined toward musical entertainment.

Those persons who described themselves as indifferent to music, did not like it or actually tried for a long time some form of music lessons and made a total failure of them showed a different set of measurements. The average length was 5 cm., the average anterior-posterior distance was $1\frac{1}{2}$ cm. and the average width was $2\frac{1}{2}$ cm. Thus, the differences were much greater than one would at first believe. Our figures are summarized as follows:

Drummers—58	Cellists—96
Violinists—106	Conductors—19
Oboes—12	Horns—18
Flutists—26	Saxophonists—92
Singers—127	Composers—21
Guitarists—6	Accordion players—12
Pianists—206	Lovers of music—412
Music teachers—23	Banjoists—19
Whistlers—3	Organists—93
Trombonists—3	

The remaining 648 individuals form the non-musical group.

Remarks: Some of the persons measured were in a detention prison and alcoholic, four were mental defectives, two were distinct hypothyroid cases, but this last group were much more interested in music than the average person. In fact, the mental defectives played in a band on Randall's Island and did almost nothing else. These were put in the calculations because the large ears seemed to substantiate the thesis of this communication. The largest ears belonged to an inmate of Randall's Island, a cretin who was a saxophonist. The length

—Concluded on page 446

Read at a meeting of the Brooklyn Neurological Society, May 27, 1936. From a Report to the American Anthropological League, January, 1936.

Cancer

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CANCER OF THE OVARY

CANCER of the ovary as compared with cancer in general has an incidence of about one in forty. In New York state in 1935 there were 18,600 cancer deaths of which 449 were of the ovary or Fallopian tube. This equals 2.4 percent (1). As cancer of the tubes is so very rare these figures may be regarded as applying principally to the ovary.

These statistics refer only to primary cancer of the ovary. It is very well known that a large amount of cancer of the ovary is secondary to a lesion elsewhere. Clinically, as we meet cancer of the ovary, it differs from that of other organs in that on careful investigation it turns out that one in every three cases is metastatic from cancer of other distant organs particularly of the digestive tract (2). This fact therefore enhances the importance of this subject above its precise statistical status.

The symptomatology of ovarian cancer is vague and confusing. However, bleeding from the vagina in connection with this disease is being recognized as of much importance and should be described in detail in each case as to amount and intervals as it may suggest the nature of the tumor. More will be said of this subsequently. A brief reference to the symptoms of endocrine origin will be undertaken. Confusion in diagnosis with uterine lesions will also receive some discussion. This at times includes uterine fibroids and cancers both of the fundus and of the cervix. Finally, it should be impressed upon all of us that cancer of the ovary is frequently not recognized until an exploratory operation

is undertaken and that even then the tumor may appear so small that there is great danger of overlooking it entirely.

In two-thirds of the cases of ovarian cancer there is a history of vaginal bleeding. This vaginal hemorrhage assumes even greater significance if it occurs a number of years after the menopause (3). It may have a curious regularity suggesting that after an interval of years actual menstruation has been resumed. However, this very characteristic points quite distinctly to ovarian cancer, constituting a nearly pathognomic symptom, for the tumor tissue contains hormone-producing constituents (4). But even if the bleeding is not so characteristic it may still indicate ovarian cancer. Although obscure bleeding most often is associated with cancer of the uterus either of the fundus or of the cervix, yet it is important not to overlook the fact that ovarian cancer may be the underlying disease.

Often in younger women a diagnosis of fibroid uterus will have been made; but at operation ovarian tumors may be found either instead or in addition (5). In such cases the history had not been different in any respect from that of typical fibroids. Irregular bleeding of large amounts may take place in either condition. And on pelvic examination the findings may fit in so well with fibroids that the very small tumors of the ovaries may not be recognized. At the very operation itself cancer of the ovary may not be recognized as it may be a very small growth within an ovary of normal size (6). Not a few excellent specimens of ovarian cancer in early stages have been obtained because the op-

erator in doing an hysterectomy removed both tubes and ovaries as well.

The endocrinology of ovarian tumors is a subject in itself (7). There are a number of ovarian tumors that should be thought of purely as a result of a study of a patient from the general aspects of internal secretions. These disturbances may have no symptoms whatever suggestive of a local pelvic lesion (8). The disturbed internal secretions may produce masculinization (9). In such a syndrome ovarian tumor must be strongly suspected (10). In the presence of feminization in very early ages ovarian tumors must also be surmised (11, 12, 13). There is a relationship between these tumors of the ovary and the occasional occurrence of hypernephromata, which is probably more or less on an endocrine basis too. In hermaphroditism naturally neoplasm of the pelvic organs must be considered.

In general, quite apart from endocrinology there is a peculiarity of these tumors not easily explained. We refer to a curious multiplicity of these tumors. Not merely are they frequent as bilateral tumors in the same tissue but they are often associated with cancer of other tissues, apparently primary in both localities (14, 15, 16). Meigs (4) also devotes an entire chapter to the subject of the frequency of multiplicity of these tumors of the ovary and tumors elsewhere, either benign or malignant. He quotes the literature with numerous references. A study of this subject might have considerable bearing on the etiology of cancer in general.

It seems inescapable mentioning a few surgical implications. The large group of typical inflammatory cysts should not be considered tumors at all, and need not be feared. However, any solid tumors or intracystic growths are serious and should be assumed to be malignant until the pathologic examination shows them otherwise. In any suspicious tumor, if the patient is not altogether too young it is the part of wisdom to remove both ovaries even though but one seems involved in the neoplasm because the growths are so often bilateral.

When an hysterectomy is done in the years approaching the menopause it seems safer to include the adnexa as well, because these may later become the site of cancer. If actual cancer of an ovary is suspected on gross inspection at operation then the uterus including the cervix and both adnexa should be removed as a single con-

tinuous specimen (4). In every case of solid ovarian tumor an examination of the gastrointestinal tract should be made because so many of these tumors are metastatic cancers. Indeed there are some cases on record of ovarian cancer in which gastric cancer could not be demonstrated at the time of the first operation but did appear subsequently (17).

Surgery in malignancy of the ovaries can be greatly improved as to ultimate results, if free use is made of both preoperative and postoperative irradiation (18, 19). Indeed this seems a field in which irradiation is particularly effective.

C. W. H.

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ALUMINUM COOKING UTENSILS

In our opinion, there is not the slightest reason for believing that food cooked in Aluminum cooking utensils is harmful. We believe that all such propaganda against Aluminum cooking utensils comes either from faddists, quacks or ignoramuses, or in some cases, is doubtless inspired by the makers of other kind of cooking utensils.

—J. A. M. A.

Economics

Department Edited by Thomas A. McGoldrick, M.D., LL.D.

BUREAUCRATIZED MEDICINE

BOTH TRAGIC AND ABSURD WHEN CONSIDERED FROM A TAXATION STANDPOINT



MARY ROBERTS RHINEHART recently offered an excellent diagnosis, in the course of an editorial in the *Ladies' Home Journal*, of our taxation disease complicated by the ailment known as bureaucratized medicine. The following quotations are from Mrs. Rhinehart's editorial:

"Once people lived within the family income and saved or invested any margin, or saved to educate their children and to leave them something with which to start in life, or to carry them through in case of inability to work and earn. Due to taxation there is now no such margin of safety in the average American home. Now between twenty-five and thirty-five cents out of every American dollar goes to the tax collector. Thus, an income of twelve hundred dollars a year is now really only one of from eight to nine hundred dollars. The so-called rise in the cost of living is nothing more or less than the tax burden, skilfully concealed. And the pay envelope or salary check pays it all. Time was when some of these taxes were called painless ones. That time has passed. They are no longer painless. They hurt! And they are already resulting in a lowering of our standard of living. What happens to a family when it pays—even if it does not know it—more in taxes than for food? Our total annual tax bill is now nine billion dollars, and our food only seven. What happens when we pay three times as much for taxes, direct or indirect, as we spend for rent? And nine times as much as we spend for all types of medical care? We are doing that now.

"Women spend the bulk of the home income. The cost of all governmental activities is handed on to her in everything she buys; the grocer, the butcher, the department store, the man from whom she rents her house—all pass on to her and her dollar the taxes they must pay. They must, or go out of business, since the wholesaler or the manufacturer has passed his taxes on to them. In addition, her attenuated dollar pays an almost unlimited number of direct taxes. It pays a tax on telegrams and cables, on letters, on cameras and all sporting goods, on matches and candy, on cosmetics and toothpaste, on tires and gasoline for the car, on theater and motion-picture tickets, on her safe-deposit box at the bank and on her stocks and bonds if she has any left to put into it. Even the family dog pays a tax! As to the family automobile—what with the car itself, the materials that go into it, the fuel to run it and the annual taxes on it, the cost in taxation is estimated at about thirty-one per cent each year of the value of all the cars in the country.

"As if this is not already enough, some groups of individuals want to establish a great bureaucracy of state medicine. Where will the money for this come from? From the same place all taxes must come, the family purse. And, if a scheme of state medicine should come to pass, the doctor will be placed in the peculiar position where he will pay taxes to provide medical care for his own patients."

Contemporary Progress

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Medicine

Protamine Insulinate

● A number of reports have appeared recently on protamin insulinate (See abstract and comment *MEDICAL TIMES*; April 1936, p.119).

H. BOWCOCK of Atlanta, Georgia (*Southern Medical Journal*; 29:701-704, July, 1936) reports the use of protamine insulinate in the treatment of a few ambulatory diabetic patients as well as hospital patients. This form of insulin was used only for ambulatory patients who were "intelligent, well-trained and cooperative," but who had shown difficult or poor control of the disease with the regular insulin. The change to protamine insulin in these cases was made gradually. In the majority of all cases—ambulatory and hospital—it was found possible to control the disease with a single injection of protamine insulin daily or with such a single dose plus a small dose of regular insulin given simultaneously. Insulin reactions were less liable to occur, and if they did occur were milder and more gradual in onset so that the patient could take appropriate measures to combat them. In only one of the author's 28 patients (11 ambulatory and 17 hospital patients) was control of the disease less satisfactory with protamine insulinate than with regular insulin. In all other cases the protamine insulin rendered the carbohydrate metabolism more nearly normal, and in some cases enlargement of the liver subsided.

I. M. RABINOWITCH and his associates at the Montreal General Hospital (*Canadian Medical Association Journal*; 35:124-129, Aug. 1936) report the use of protamine insulin in the treatment of diabetic patients

at that hospital. Severe diabetics only were treated by this preparation in order to give it a severe test. The high-carbohydrate low-calorie diet usually employed in the treatment of diabetes in this hospital was used. It was found that in most of the cases the disease could be satisfactorily controlled with a single daily injection of protamine insulin. The large doses given did not cause any severe hypoglycemic reactions. Dosage may be reduced when a persistently normal blood sugar is obtained, or when the urine is constantly free from sugar (unless a condition known to increase the renal threshold for glucose is present). It was found that excessive bilirubin and cholesterol in the blood were definitely reduced by the protamine insulin treatment. A number of the patients are now being treated at home, reporting for blood sugar determinations once a week.

F. M. ALLEN (*Journal American Medical Association*; 107:430-431, Aug. 8, 1936) states that he has found protamine insulinate to be of definite clinical benefit in certain cases of diabetes, but he believes that the present form of protamine insulinate is better adapted to the more moderate grades of diabetes, while in the most severe cases the old insulin must still be used either partially or wholly. Other laboratories are carrying on work with new compounds of insulin with the purpose of securing forms of insulin absorbable at different rates, but Hagedorn's work in developing protamine insulinate "must receive credit for the pioneer opening of what promises to be a new era of insulin treatment, apparently of greater complexity as well as greater success."

COMMENT

The new insulin has the advantage of absorption over a longer period of time—

seven to eight hours. This makes it extremely valuable in treating severe diabetics, especially in children.

M. W. T.

Effect of Acetylsalicylic Acid on Gastric Secretion

● J. G. SCHNEDORF, W. B. BRADLEY and I. C. IVY (*American Journal of Digestive Diseases and Nutrition*; 3:239-244, June 1936) report experiments on normal human subjects and on dogs to determine the action of acetylsalicylic acid and the modifying action of calcium gluconate and sodium bicarbonate. It was found that in some normal human subjects and in normal dogs, a single dose of acetylsalicylic acid of 1 to 2 gm. caused gastric retention. The addition of calcium gluconate tended to increase the degree of retention, but the addition of sodium bicarbonate increased the rate of gastric evacuation. These single oral doses of acetylsalicylic acid increased the total titrable acidity of the stomach contents in both humans and dogs; the addition of calcium gluconate diminished the rise in acidity and the addition of sodium bicarbonate decreased the acidity below that of the controls. In dogs with pouches of the entire stomach, the local application of acetylsalicylic acid caused a definite increase in the neutral chloride, "or diluting secretion of the stomach," the addition of either calcium gluconate or sodium bicarbonate resulting in only a slight increase in neutral chloride. In experiments on normal dogs and on dogs with Pavlov stomach pouches, the prolonged daily administration of acetylsalicylic acid caused definite increase in gastric secretion. When calcium gluconate was given in addition, the increase in gastric secretion was not nearly as marked, while with the addition of sodium bicarbonate, there was an actual decrease in gastric secretion below the control values. In these animals, it was found that calcium gluconate was at least as effective as sodium bicarbonate, if not more so, in controlling the vomiting and anorexia resulting from the prolonged salicylate administration, and in preventing ulcer formation in the normal dogs. This is in agreement with the findings of other investigators. Both calcium gluconate (and possibly other calcium salts) and sodium bicarbonate, therefore, have a definite protective action against the gastric irritation produced by salicylate medication. The action of sodium bicarbonate may be explained by its effect in reducing

acid irritation, as shown by these experiments, but "this is not true of calcium gluconate whose protective action against digestive disturbances appears to be due also in part of some systemic action of calcium." The authors conclude that the evidence indicates that when salicylates must be given in large doses, the optimal protection is obtained by giving them with both sodium bicarbonate and calcium gluconate.

COMMENT

Interesting and important observations. Clinically acetylsalicylic acid and charcoal seem to be much less irritating to the stomach.

M. W. T.

Blood Regeneration in Patients with Hematemesis or Melena from Peptic Ulcer with the Meulengracht Treatment

● E. SCHIDT of Copenhagen, Denmark (*American Journal of Medical Sciences*; 192:153-167, August, 1936) reports the use of Meulengracht's purée diet in the treatment of peptic ulcer with hematemesis or melena. This is a well-balanced diet that includes meat, fish, vegetables, fruit, "in fact all sorts of food" finely minced in the form of "forcemeat," mashed potatoes, puréed vegetables, fruit juices, jellies, etc.; in addition iron is given, and an aperient (cascara). The use of this diet in cases with blood loss and resulting anemia is based on the work of Whipple and his associates, who demonstrated that anemic dogs regenerate blood much better on certain diets, especially meat and liver, than when fasting or fed carbohydrates or milk. A comparative study was made of two groups of 10 patients, each with bleeding ulcer, one group given the usual ulcer diet and the other, the Meulengracht diet. The severity of the hemorrhage, age and sex of the patients and the red cell counts on admission were closely comparable in the two groups. It was found that the group on the purée diet and iron regenerated blood much more quickly than those on the usual ulcer diet. In twenty days the average red cell count had risen to 3.45 million in the former group and to 2.80 million in the latter. In the purée diet group, the curves for hemoglobin and red blood cells followed each other closely, the color index being very nearly 1, but in the ulcer diet group the hemoglobin regenerated much more slowly than the red cells, the color index remaining low throughout

the period of observation. The patients on the purée diet also showed better subjective improvement, "obvious to both doctors and nurses, but not to be expressed in figures."

COMMENT

It would be interesting to carry on these observations with reticulocyte checks. In my younger days I used the milk diet suggested by Dieulafoy for the condition he called chlorobrightism. The hemoglobin often fell to twenty or thirty. On an absolute milk diet for several weeks the hemoglobin increased.

M. W. T.

Macrocytic Anemia in Association with Lesions of the Bowel

● H. R. BUTT and C. H. WATKINS (*Annals of Internal Medicine*; 10:222-232, August, 1936) report that in 20 cases of lesions of the ileum and colon at the Mayo Clinic there was an associated anemia, and in 11 of these the anemia was of the macrocytic or pernicious anemia type. Six of these cases of macrocytic anemia occurred in 7 cases of ileitis of the terminal portion of the ileum; the occurrence of this type of anemia appeared to be independent of the amount of involvement of the ileum. No change in the blood picture was observed after parenteral administration of liver fractions effective in the treatment of pernicious anemia; but the condition of the blood improved spontaneously after operation in these cases of terminal ileitis. While anemia of the pernicious type may occur in any intestinal lesion that produces obstruction, it would appear that in terminal ileitis particularly, the process produces some change, possibly a toxin, that prevents utilization of the hematopoietic principle by the liver.

COMMENT

Another point about terminal ileitis is its frequently mistaken diagnosis for appendicitis—extremely difficult to diagnose in some cases. No doubt many patients are operated on for appendicitis when terminal ileitis is the cause of the symptoms. One interesting factor about the macrocytic anemia associated with intestinal lesions: it is possible that liver extract may be of benefit when given by mouth and not by parenteral administration. Faust and Swartzwelder (Proc. of Soc. for Exp. Biology and Medicine, 1936, 33:514:518) conclude that "the fraction of raw liver which is efficacious as an amebostatic agent is either different

from that which stimulates erythropoiesis, or that its amebostatic action is inhibited when it is introduced intramuscularly."

M. W. T.

Sodium Citrate—a Spirocheticide

● R. S. LEADINGHAM (*Journal of Laboratory and Clinical Medicine*; 21:922, June, 1936) notes that sodium citrate in 2 per cent solution is frequently used in the laboratory to prevent coagulation of cover-slip preparations of blood and exudates, and is not generally considered to have bactericidal properties. In preparing a cover glass specimen from a laryngeal lesion in a case of Vincent's angina, numerous Vincent's organisms were found to be present; when a drop of 2 per cent sodium citrate was added, there was immediate cessation of movement of the spirochetes and "apparently eventual dissolution." When the solution was applied to the ulcer from which the specimen was taken, the Vincent's organisms disappeared within ten minutes, and none were present forty-eight hours later when the patient was discharged. The author suggests that if sodium citrate proves to be an efficient spirocheticide, it may "replace much more expensive and harmful therapy" for the local or intravenous treatment of spirochetal infections.

Surgery

Modern Methods of Preventing Postoperative Distention

● W. R. LEVIS and E. L. AXELMAN (*American Journal of Surgery*, 32:308-312, May, 1936) find that postoperative atony is "an all too familiar picture complicating convalescence." In fact every laparotomy produces some intestinal atony, but in many cases it is of so slight a degree as to escape attention and spontaneously corrects itself without special treatment. Of the drugs that have been used in the treatment of postoperative atony and distention, when treatment is required, eserine salicylate given parenterally has perhaps given the best results, but it has some undesirable by-effects. Recently a synthetic preparation—prostigmin—has been introduced which chemically resembles eserine but has a less complicated structure and greater stability. Pharmacologically prostigmin has a more pronounced action on smooth muscle tonus

than eserine, but a less pronounced miotic effect, and shows almost no cardiac by-effects. The authors have used prostigmin for the prevention of postoperative intestinal atony and distention in laparotomies. As a routine with inhalation anesthetics, the first injection of 1 c.c. prostigmin is given three to four hours after operation, followed by a second injection four hours later. Injections are continued for twenty-four to forty-eight hours at four hour intervals. After the last injection a soapsuds enema is given. With this method, employed in 88 cases, postoperative distention and gas pains have been reduced to a "negligible minimum;" in an analogous series of laparotomies without the use of prostigmin prophylactically, 60 to 75 per cent. of the patients showed either gas pain or signs of gastro-intestinal atony or both. As a rule intestinal peristalsis has been established within twenty-four hours after operation with the use of prostigmin. The use of high enemas, rectal tubes, etc., has been eliminated. No untoward effects on blood pressure or cardiac action and no systemic or local reactions have been noted with the use of prostigmin by the method described.

● K. SCHLAEPFER (*Western Journal of Surgery, Obstetrics and Gynecology*, 44:437-439, July, 1936) also reports the prophylactic use of prostigmin for the prevention of intestinal atony and gas pains. The first prostigmin injection (1 c.c.) is usually given eight to ten hours after operation; and injections are repeated at eight hour intervals. Twenty-four to forty-eight hours after operation an enema of a 15 per cent. sodium chloride solution is given. In cases where the operation involves prolonged exposure of the open abdominal cavity, the author believes the first prostigmin injection can be given in less than eight hours after operation. From his experience with this use of prostigmin, the author is convinced that it is of definite value in restoring early peristalsis after laparotomy, greatly diminishing, if not entirely preventing, gas pains and distention. If nausea is present it is "indirectly reduced in duration."

COMMENT

Levis and Azelman's account of a new remedy for a common complication of abdominal operations is most interesting and encouraging. We do not agree that "practically every laparotomy develops intestinal atony." So much depends on minimum and

dainty handling of peritoneum-invested structures that it can be avoided in many ordinary cases by many surgeons of deliberately gentle habits. However, all of us observe it in many procedures of magnitude, and we hope that extended use of prostigmin by many surgeons may corroborate the happy results obtained by the authors.

Schlaepfer's article corroborates in a measure the results and opinions expressed in the report of Levis and Azelman.

C. H. G.

Postoperative Respiratory Complications

● E. A. ROVENSTINE and I. B. TAYLOR (*American Journal of Medical Sciences*, 191:807-819, June, 1936) report a study of postoperative respiratory complications in 7,874 cases at the University of Wisconsin Hospital. Respiratory complications occurred in 6 per cent. of these cases, including 287 cases (3.60 per cent. of the series) who developed "slight cough." There were 144 cases with laryngitis, and 89 with severe cough. Lobar and bronchial pneumonia occurred in 49 cases (0.60 per cent.); massive collapse of the lung in 13 and partial collapse in 22; upper respiratory obstruction was noted in 32 cases. There were only 47 deaths due to respiratory complications in the series (0.59 per cent.) while the total number of deaths was 293 (3.72 per cent.). Of the 47 "respiratory deaths," 31 were due to pneumonia. There was a definite seasonal variation in the incidence of postoperative respiratory complications, which corresponded to the variations in prevalence of respiratory diseases in the population outside the hospital. The authors note that it has been found advisable to omit certain "elective operative procedures" during months with a high incidence of respiratory diseases. The presence of any respiratory tract infection, even mild pharyngitis or oral sepsis, in surgical patients substantially increases the incidence of postoperative respiratory complications. The nature of the anesthetic agent *per se* had little influence on the incidence of the postoperative respiratory tract infections; the degree of narcosis had a much more definite effect on incidence. Surgical procedures that can be well done under first plane anesthesia (Guedel's classification, 1927) "should not have more profound narcosis." Under spinal anesthesia without intercostal muscle

paralysis, there were less than one-half as many respiratory complications than under spinal anesthesia with intercostal muscle paralysis. The pre-operative condition of the patient had a definite effect on postoperative respiratory complications; the increase in respiratory complications was in direct proportion to the seriousness of the risk. But the duration of the operation had "the most striking influence" on postoperative respiratory complications. Operations lasting less than an hour showed an incidence less than the average for the series; with operations of one to one and a half hours, the incidence of respiratory complications was double that for one-hour operations; and with a two-hour operation duration three times that for one hour; the operations of four hours' duration showed the highest incidence of respiratory complications. Despite the seriousness of the longer surgical manipulations and the grave risks encountered in the majority of them, duration of operation alone appears to be a definite factor influencing respiratory morbidity."

COMMENT

An exceedingly valuable and instructive report. Undoubtedly postoperative atelectasis is represented here under "massive collapse" and "partial collapse," total 35 cases in 287 cases of respiratory complications. Inasmuch as these observations have unquestionably been conducted with greater than average precision and thoroughness, they would indicate that those who regard "atelectasis" or "collapse" as a most common respiratory complication are in error. The value of spinal anesthesia in reducing respiratory complications is clearly set forth. The influence of long operative procedures is definitely established. We advise that every surgeon and anesthetist read this paper.

C. H. G.

Mortality of Gallbladder Surgery and the So-called Liver Death

● F. F. BOYCE and his associates at the Louisiana State University School of Medicine (*Surgery, Gynecology and Obstetrics*, 63:43-53, July, 1936) report a study of the mortality of 404 gallbladder operations at Charity Hospital, New Orleans, La., in the last four years; and 100 consecutive fatal cases that have occurred in the last eight years. The mortality for the 404 operative

cases was 9.1 per cent. (37 deaths), "which is exceedingly high." The mortality was higher for choledochostomy than for cholecystectomy or cholecystotomy. In the 100 deaths studied, 24 were due to peritonitis, 23 showed the "liver death" syndrome, 17 were due to pulmonary complications, 11 to shock and hemorrhage, 10 to cardiorenal complications, and 15 to "miscellaneous" causes. This shows a high percentage of "liver deaths"; and it is an interesting fact that this group showed the highest proportion of "good" and "fair" surgical risks found in any of the groups. In 8 cases of this group death occurred within forty-eight hours after operation, and in another 5 cases in forty-eight to seventy-two hours after operation; in both these sub-groups, hyperpyrexia was the only notable symptom. In the first sub-group of 8 cases, autopsy was obtained in one, and showed degenerative changes in the liver with some congestion of the kidney; in the second sub-group, autopsy was not obtained in any case. In 2 other cases hyperpyrexia developed several days after operation and there was marked oliguria before death. In another sub-group of 5 cases, there was marked oliguria progressing to anuria with death due to uremic coma; and in another 3 cases pronounced cardiovascular collapse occurred. The author's theory of liver death is that all patients with biliary disease show some degree of liver damage, which results in failure of the liver to function properly under the added stress of operation which involves anesthesia, trauma, drop in intra-abdominal temperature and changes in intrahepatic and biliary pressure. As liver function fails, toxic substances that normally are detoxified by the liver are thrown off undetoxified; then the liver cells themselves undergo some necrotic changes and discharge additional toxic products resulting from this degenerative process. This places an additional strain on the renal function, which results in renal damage. The authors are of the opinion that all patients with gallbladder disease are potentially poor risks, because of the possibility of liver damage, and should be treated as such "regardless of how incongruous their inclusion in such a category may seem."

● A. S. W. TOUROFF (*Surgery, Gynecology and Obstetrics*, 62:941-950, June, 1936) suggests another view of the so-called liver death or "liver shock." In a series of 1,360 cholecystectomies, there were 4 cases in

which the typical postoperative clinical course of the so-called "liver shock" occurred with unexplained fatal termination. Careful postmortem study of these 4 cases showed in each instance an unrecognized fulminating intraperitoneal or pulmonary infection. The author is convinced that true "liver shock" is much less common than is supposed, and that many cases so diagnosed may have been due to an unrecognized infection which could be found only by detailed postmortem study. He states that all patients exhibiting the clinical syndrome of liver shock "should be suspected of harboring virulent infection, for which early extensive and thorough search should be conducted during life." Such infection, if discovered, "should be dealt with promptly and vigorously" with the hope of occasionally saving a life.

COMMENT

Boyce's paper is a conscientious report with valuable opinions. We cannot agree that "all patients with gallbladder disease are potentially poor risks." Many are. The cardinal point is to determine which are. Repeated blood sugar and cholesterol estimations, renal efficiency tests, and thorough urinalyses help us considerably.

Touroff's infection theory is interesting and should be borne in mind.

C. H. G.

Local Prophylactic Use of Antigas Gangrene Serum

● HOWARD LILIENTHAL (*Annals of Surgery*, 104:58-63, July, 1936) reports the use of antigas gangrene serum in dressing the wound in operations on tissues that are the site of gas gangrene infection. He reports 10 such cases, in most of which operation was done for abscess or gangrene of the lung; in one case the operation was for traumatic gangrene of the leg. After removal of the infected tissue (usually lobectomy in the pulmonary cases), the wound was packed with material impregnated with the antigas gangrene serum. The results were excellent, none of the cases developing either gangrenous or other infection of the operative wound or surrounding tissues.

COMMENT

A novel idea with a logical foundation! Its application by a master-surgeon shows results which are impressive.

C. H. G.

Urology

Urinary Lithiasis

● C. C. HIGGINS (*Journal of Urology*, 36:168-177, Aug., 1936) states that through inquiries addressed to urologists in various countries he has found that there are definite areas in which there is an unusually high incidence of urinary calculi ("stone areas"). In all these areas the diet of the people is poorly balanced and definitely deficient in vitamins. In experimental work at the Cleveland Clinic, renal and bladder calculi have been produced in white rats and bladder calculi in dogs by a diet deficient in vitamin A (but otherwise adequate). The calculi developed when the vitamin A deficiency was not of sufficient degree to produce xerophthalmia. These stones were composed chiefly of calcium phosphate and carbonate and ammonium phosphate (in the dogs); in Dalmatian dogs and in chickens, uric acid stones could be produced. A high vitamin A diet, with acid or alkaline ash, according to the reaction of the urine from the kidney harboring the stone, has been used in the treatment of renal calculi not causing obstruction and in certain cases in which operation was not indicated; and also after operation for renal calculus to prevent recurrence. The incidence of recurrence has been definitely reduced by this method in the last two years. In more than 35 cases in which definite diagnosis of renal calculus was made, the stones have been caused to undergo complete solution and to disappear entirely when the patient has followed the prescribed diet. Other cases have not responded to the treatment, and the author has not yet been able to determine the reason for this. He is carrying on further studies, especially in regard to the outer coating and quantitative analysis of stones that do not dissolve.

COMMENT

This study of urinary lithiasis is interesting and instructive because it emphasizes the influence of diet in producing stones in experimental animals and in either dissolving or preventing recurrence in human beings. The value of proper diet in any of the errors of metabolism is beyond question but it is by no means the sole or the chief element. The stones dissolved are those not causing obstruction and therefore not severe cases. This study has not developed the part played by infection, especially in the cases of failed solution. Probably that will be

part of the subsequent studies as promised. Nevertheless such investigations are steps forward and are to be encouraged and commended.

V. C. P.

Treatment of Prostatitis by Local Heat

● L. G. LEWIS (*Journal of Urology*; 35:681-687, June, 1936) reports the treatment of prostatitis by the application of local heat with an apparatus similar to that used in the Elliott treatment of pelvic inflammation in women, introduced per rectum. This apparatus automatically heats water by electricity and circulates it through the applicator at a controlled temperature and pressure. The applicator is emptied and rolled into a small cylinder for introduction into the rectum; when in the desired position it is ballooned out under the desired pressure and the water circulation begun. The temperature of the water bath is raised gradually from 110 to 124°F. at the first treatment; at subsequent treatments, it may be gradually increased up to 130°F. Pressure is maintained in the applicator at 2½ to 3 pounds. The patient is conscious of a feeling of warmth in the rectum, but the treatment should not cause discomfort. From ten to fourteen treatments are given; and in chronic cases more treatments may be necessary. In four cases of acute non-specific prostatitis and seminal vesiculitis treated by this method, relief was prompt in all. The prostate was rapidly diminished in size and the pus discharge cleared up. In 11 cases of acute or subacute gonorrheal prostatitis and seminal vesiculitis treated, relief from symptoms was obtained in all; urethral discharge ceased in four to seven days; and in cases where the prostate was enlarged it was reduced to practically normal size. Of 38 cases of chronic prostatitis with a history of gonorrhea, the infection was entirely cleared in 11 cases (29 per cent); 9 patients showed improvement and definite reduction in the pus content after completion of treatment; 2 showed slight improvement; 2 showed reduction in the size of the prostate with fibrosis without reduction of infection. Ten patients (26 per cent) were not improved. In 8 of these cases with complicating arthritis, the joint symptoms cleared up entirely in 2 cases and showed definite improvement in 4 cases. In 27 cases of chronic non-specific prostatitis, the prostatic infection was cleared in 3 cases (11 per cent); 10

showed improvement in the prostatic pus content; 4 showed symptomatic improvement; one showed slight improvement; 9 (33 per cent) showed no improvement. Symptoms referable to the prostate gland (pain, backache and frequency of urination) were present in 16 cases and were relieved in 11 cases (69 per cent). While the results in chronically inflamed prostatitis with this method are not as uniformly good as in acute cases, the author recommends the method "as an effective addition to the urologic armamentarium."

COMMENT

It requires ten years for any new method of treatment to reach general acceptance for the programs of societies, the pages of large journals and text-books, and finally for use by growing numbers of the profession. The heat which Lewis applies is heat by contact. It is the least efficient of the methods of application. It is fully forty years since the leaders in physical therapy began to call attention to heat and other modalities as of value in the lesions of the prostate. These pioneers were called wanderers far afield—myself included—but others in large numbers are now entering the field, too often with the announcement of new discoveries. If research is carried out beginning more than a generation and a half ago the same principles will be found although the apparatus was not as perfect as that of today. There is nothing new under the sun.

V. C. P.

Treatment of Contracted Bladder with Controlled Tidal Irrigation

● J. J. LONGACRE (*Journal of Urology*; 36:25-33, July, 1936) describes a method for the treatment of contracted bladder—the end result of a chronic diffuse cystitis. The pathological changes in chronic cystitis, he notes, are "most diversified," but in all cases the involvement of the bladder wall is "more or less total," including all its layers. Fibrous tissue is formed as a result of the inflammatory process, and this results in thickening of the bladder walls, reduction in the bladder capacity, and a tendency of the contour and capacity of the bladder to become fixed. This fibrous tissue may be gradually reabsorbed, after the inflammation has subsided, but if this is not the case, contracted bladder results. Treatment of contracted bladder must include: The

eradication of urinary obstruction or extravasical foci of infection; general measures, such as high caloric, high vitamin diet, or possibly ketogenic diet, forcing fluids, and rest; and bladder irrigation with periodic hydraulic distention. This hydraulic distention has previously been carried out by Young's method, but this involved the use of high pressures up to 185 to 245 cm. of water with some danger of ureteral reflux and considerable discomfort to the patient. Longacre has found that the method of tidal irrigation or tidal drainage as developed by Laver in 1929, and later modified and used in the treatment of paralytic bladders by Monroe and Hahn, is most suitable for the treatment of contracted bladder. The apparatus has been so modified that pressures up to 60 to 75 cm. can be obtained; the intravesical pressure is raised gradually to this level, satisfactorily stretching the bladder wall but with little danger of ureteral reflux or of damage to the bladder wall. The bladder is completely emptied at intervals by a combination of siphonage and gravity flow without interfering with normal contractions. A mild antiseptic solution is employed for irrigation. The only dangers of this method are those associated with the use of an indwelling catheter, but these are minimized by the method of irrigating and evacuating the bladder periodically. This method has been used with good results in the author's clinic in the treatment of chronically infected and contracted bladder; three illustrative cases are reported, showing increase in the capacity of the bladder, and relief of symptoms under treatment.

COMMENT

Infection which has destroyed a mucosa has already reached an incurable result. The mucous membranes of the body when once they have become diseased beyond rather a narrow limit do not recover. When in the bladder severe involvement of the muscularis is added a well-nigh hopeless result is present. A very large factor is continuance of the underlying infection; unless that is relieved either as a latent and constant element or as a relapsing and active element very little can be done even with the painstaking methods Longacre notes. As soon as improvement has appeared the patient must be trained to exercise the bladder himself. This step corresponds with voluntary evacuation at stated intervals after prostatic surgery.

V. C. P.

Kidney as a Bacterial Filter— Tuberculous Bacilluria

● W. L. FORSYTH and K. SAMAAN (*British Journal of Urology*; 8:144-145, July, 1936) report experiments on dogs with *Bacillus fluorescens*, a non-pathogenic organism. Cultures of this organism were injected intravenously; and at the end of twenty-four hours, the dogs were bled to death, the kidneys with tied ureters removed and the urine from the renal pelvis cultured. In normal dogs given 5 c.c. of the culture containing 100 mill. bacteria per c.c., the organism was not found in the urine; in normal animals given the same dose with a concentration of 1000 mill. bacteria per c.c., the organism was found in the urine in 3 out of 13 cases. In animals rendered nephritic by the injection of uranium, the organism appeared in the urine in the majority of cases with either dosage. In pulmonary and bone tuberculosis, the authors state, the concentration of the tubercle bacilli in the blood probably "never reaches anything like even the smaller concentration" used in these experiments, and if the bacilli are found in the urine, it indicates, not that they have passed through a normal kidney, but that there is "most likely" a caseous tuberculous focus in the urogenital tract.

COMMENT

There is certainly a great difference between a non-pathogenic organism probably without toxic effect on the kidney and a pathogenic organism with great toxic effect such as the bacillus of tuberculosis. Probably much depends on where the focus is and how deeply its damage has proceeded. I remember a case in point. He had large quantities of pus in the urine typical of a tuberculous kidney but no bacilli for about eight months. They then appeared in very large numbers so that a student would have recognized them at once. One-third of the kidney was destroyed and two-thirds hypertrophied. Obviously the disease had originated near the capsule and slowly extended into the tubules and then the urine. It is to be noted that artificial nephritis caused even the BACILLUS FLUORESCENS to appear in the urine in this study.

V. C. P.

Tuberculosis Bacilluria, Especially in Cystitis

● H. WIEBER (*Zeitschrift für Urologie*) 30:361-382, July, 1936) is of the opinion

that tubercle bacilli may occasionally pass through the normal kidney, but this is rare; this passage through the renal filter occurs more frequently if the kidney has been damaged by the toxins of the disease, without an actual tuberculous lesion; but this also is relatively rare. The presence of tubercle bacilli in the urine usually indicates a tuberculous lesion in the urogenital tract. He has found cultural methods of more value for the demonstration of tubercle bacilli in the urine than animal inoculation; he employs the Löwenstein culture medium with malachite green, using at least two culture tubes for each specimen. The use of this method in apparently non-specific cystitis has shown that it may be of value for the diagnosis of renal tuberculosis when symptoms do not indicate a renal lesion. In 152 cases of apparently non-tuberculous cystitis, 10 gave positive cultures of tubercle bacilli; 7 of these cultures were typical and were pathogenic for guinea-pigs. In 3 of these cases the diagnosis of renal tuberculosis could be definitely made, which in one instance was confirmed at operation; in 2 cases complete urological examination could not be made; and in 2 others a renal calculus was present, but tuberculosis could not be definitely excluded. In the 3 cases with atypical, non-pathogenic cultures, no evidence of renal tuberculosis was found, but only one of these patients had a complete urological examination. The majority of these patients with typical positive cultures were elderly, suggesting that in elderly persons cystitis may be due more frequently to tuberculosis than has been supposed.

COMMENT

The guinea-pig test has stood as the great solution of borderline and difficult cases. It is not to be displaced on an overnight basis by any means. The American Public Health Association has listed the Löwenstein and another culture method like it in the Year Book but not with official endorsement. These new culture methods are worthy of careful trial, close observation and cautious decision, but the time is remote when inoculation tests will be discarded. They are very apt indeed to remain as the means of final settlement in problem cases.

V. C. P.

Pediatrics

Pectin-Agar Preparation for Diarrhea in Infants

● M. WINTERS and C. A. TOMPKINS
(*American Journal of Diseases of Children*,

52:259-265, Aug., 1936) have used scraped raw apple in the treatment of diarrhea of infants, but have found certain objections to the treatment: A good grade of ripe apples is scarce in the season when infantile diarrhea is prevalent; the expense of the treatment is relatively high; and the nursery care involved is excessive when a number of infants are being given the apple diet. As the work of Malyoth and other investigators has shown that pectin and cellulose are the two active principles of apples in this form of therapy, the authors have employed a pectin-agar combination as a substitute for the apple diet in the treatment of infantile diarrhea. Pectin from the peelings of citrous fruits was used, but an acid-free form, and agar-agar was chosen as a desirable form of cellulose; the agar-agar was finely ground and readily soluble. The following formula was employed: Dextrin and maltose 175 gm., pectin 6 gm. and agar-agar 8 gm.; this formula contains pectin in about three times the amount found in apple. These substances were mixed dry, and a pint of milk or water added to make up a day's feeding on a three hour schedule. If fat is to be excluded entirely, skimmed milk is used. For older children coloring and flavors may be added. In 42 cases of infantile diarrhea, 24 were given this pectin-agar mixture and 18 were fed scraped apple (as controls). In general the infants treated with pectin-agar were more seriously ill than those treated with the scraped apple, but the group given the pectin-agar responded more promptly than those given the apple. The apple-fed group required an average of 6.1 days on straight treatment and the stools remained liquid for an average of 4.1 days. The pectin-agar group required only 4.79 days average of straight treatment and the stools were liquid for an average of 1.3 days. The transition to the regular milk formula was also made more rapidly and easily from pectin-agar formula than from the scraped apple diet, and the weight of the infants was better maintained. The authors conclude that the pectin-agar mixture is in every way a satisfactory "substitute" for raw apple diet in the treatment of infantile diarrhea. They note also that it has a psychologic advantage as parents feel that the baby is getting a "medicine."

COMMENT

infantile diarrhea is still in the experimental stage. It will not relieve all diarrheas. Further study will enable us to decide the type of infantile diarrhea this agent

will best relieve. It must be noted that combined with either whole or skimmed milk it gives us a relatively high carbohydrate type of food.

O. L. S.

Therapeutic Value of Vitamin D and A in Measles

● HILDA M. LINFORD and her associates at the North Eastern Hospital, London (*Archives of Disease in Childhood*, 11:127-142, June, 1936) report a study of the effect of giving vitamin D and vitamin D plus A to children under thirteen with measles. The 697 cases studied were divided into three groups—a control group given the ordinary ward diet alone; a second group receiving in addition 3,000 international units of vitamin D daily as an emulsion of calciferol; and a third group given the same amount of vitamin D, and in addition vitamin A equivalent to 6 drachms of cod-liver oil of a blue value of 7.5. The three groups were fairly evenly divided as to age, incidence of pneumonia and incidence of otorrhea on admission. A comparison of the fatality rates, the incidence of pneumonia and of otorrhea after admission, and of all complications and skin lesions developing in the hospital, as well as a comparison of duration of fever and length of stay in the hospital, failed to show any evidence of a favorable effect of vitamin D or vitamin D plus A on the course of the disease. As it seems to the authors that it is "improbable" that "deficiencies of these vitamins are without influence on the course of measles," they suggest that these negative results may be explained as follows: None of these children showed definite evidence of A deficiency and very few any signs of rickets (D deficiency); or, the time of observation (average under twenty days) may have been too short to demonstrate any effect from vitamin therapy; or, the treatment may have been started too late in the course of the disease, as 81 per cent showed typical measles rash when treatment was begun (the fourth day or later).

Improvement in the Diagnosis of Whooping Cough

● A. E. GOLD and H. O. BELL (*American Journal of Diseases of Children*, 52:25-40, July, 1936) note that atypical whooping cough without the presence of the pathognomonic whoop is very difficult to recognize,

and may not be correctly diagnosed during the period of its greatest infectivity. Many infants and children who have a "suspicious" cough (but not a definite whoop) for an unusual length of time, often considered to be "a cold of undetermined etiology," may have atypical whooping cough and may be potential factors in the dissemination of "the yearly epidemic" of the disease. From a study of the laboratory findings in cases of typical and atypical whooping cough, the authors find that: In the catarrhal stage, the cough plate-droplet method is the most reliable method of diagnosis. In the paroxysmal stage the cough plate cultures are not so constantly positive, but hematologic studies show a leukocytosis with a definite lymphocytosis (of 70 per cent or over); and at the same time a retarded (normal or subnormal) sedimentation rate. In no other infectious disease of the respiratory tract is there a combination of a retarded sedimentation rate with leukocytosis and lymphocytosis found. In the period of decline of whooping cough, these tests are of less value, and the authors have found that the practical significance of the complement-fixation test, the agglutination test and the cutaneous test is also questionable. In the afebrile and atypical forms of whooping cough, the authors have found the triad of suspicious cough, lymphocytosis with leukocytosis, and a retarded sedimentation rate to be of definite value in making the correct diagnosis.

Treatment of Pertussis with Intranasal Antigen

● H. A. SLESINGER (*Journal of Pediatrics*, 9:42-48, July, 1936) reports the treatment of 24 active cases of whooping cough by the intranasal application of a soluble antigen of *Hemophilus pertussis*. The antigen was a solution of soluble proteins of recently isolated cultures of this organism, one c.c. containing the soluble proteins of approximately 20 million organisms. For the administration of the antigen, the patient was placed in the recumbent position with the head in a dependent position below the level of the body; 10 drops of the antigen were instilled into each nostril, and the patient kept in the same position for two or three minutes to permit absorption. Treatments were given daily in most cases, occasionally every second day; the total number of treatments varied from four to twelve in different cases. Of the 24 cases

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Cultural Medicine

DOCTOR COCKE OF OLD WILLIAMSBURG

PREEMINENCE in medicine in Colonial America depended much upon study abroad. Why practical-minded Colonial doctors so often chose Edinburgh is set forth in Dr. Wyndham B. Blanton's *Medicine in Virginia in the Eighteenth Century*. Edinburgh was the medical center of Great Britain, as London was the surgical center. Aside from the lower estate of surgery, the courses in London did not lead to a degree—"a tremendous asset."

Remember, however, that the choice was dictated by practical considerations—vocational considerations, as a matter of fact. Men of the very highest purpose went to Cambridge or Oxford—which meant that precious few did. None of the Virginians, as far as the writer can discover, went to Oxford. Samuel Johnson (quoted by Blanton) told Arthur Lee of Virginia in 1760 that "The Scotch or foreign education is like a house built to last a man's lifetime only; the English is like a palace or fortress intended to last for many ages. The first build lightly, the last lay a very strong and firm foundation before they begin the work." Lee, says Blanton, decided that a lifetime was enough and was graduated from Edinburgh in 1764.

It is also true that only men with fortunes, time to spare, and high scholastic abilities undertook to study medicine at Cambridge or Oxford. This was just as true of native Englishmen as of Virginians.

Then there was the liberal atmosphere at Edinburgh. The students lived carelessly about town and attended lectures as they pleased. Perhaps the less said about the moral atmosphere the better. The college was "nothing else than a mass of ruined buildings of very ancient construction." Principal Robertson admitted in 1784 that "A stranger when conducted to view the University of Edinburgh might on viewing such courts and buildings naturally enough

imagine them to be almshouses for the reception of the poor, but would never imagine that he was entering within the precincts of a noted and flourishing seat of learning."

A visitor to old Bruton Parish Church in Williamsburg, Virginia, will observe a mural tablet setting forth the professional and civic eminence of Dr. William Cocke, Secretary of State from 1712 to 1720 and the leading physician of his period. One wonders as to the possible factors behind this medical man's preeminence in Virginia. Perhaps what we have written about the medical schools of the mother country offers a clue. Cocke, born in England, matriculated in 1688 at Cambridge and received his M. B. degree in 1693. Only one other Virginian held a Cambridge medical degree, Thomas Clayton, who was born in the Colony and died thirteen years after receiving his M.B. degree. As we have said, there appear to have been no Oxonians. Cocke's was a schooling "like a palace or fortress intended to last for many ages," with a very strong and firm foundation laid before the work was begun.

The man who chose that kind of training in England, the best of its kind and cultural rather than primarily vocational, is thus distinguished in character and attainments from his fellow Virginian practitioners. Every advantage, including the geographical one of birth in England, was his; he had been admitted as a pensioner at Queen's College, Cambridge, i.e., as one able to pay his own expenses. And he not only possessed advantages of the intangible sort over the "practical" Colonials, but arrived early in the Colony with this equipment (member of the Council in 1702). Thus, despite the fact that he was a physician, followed his service as Secretary of State under Governor Spotswood.

Dr. Cocke married Elizabeth, the sister of Mark Catesby, the celebrated naturalist,

From the Editorial Research Department of the MEDICAL TIMES.

whose work on the ornithology of America has been much admired.

The Librarian of William and Mary College, Dr. Earl G. Swem, does not know of any portrait of Dr. Cocke.

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The Cocke Mural Tablet in the Choir of Bruton Parish Church, Williamsburg, Virginia

MDCCLII

Inscribed to the memory of
Dr. William Cocke,

An English Physician, born of reputable Parents

MDCCLXXII

at Sudbury in Suffolk

and Educated at Queen's College, Cambridge,

He was learned and polite,

of indisputed Skill in his profession,
of unbounded Generosity in his practice:

which multitudes yet alive, can testify.

He was, many years, of the Council
and Secretary of State, for this Colony
in the Reign of Queen Anne and of King George.

He died Suddenly, sitting a Judge upon the Bench
of the General Court in the Capitol:

MDCCLXX

His Hon: friend Alex. Spotswood, Esqr then Govr

with the principal Gentlemen of the Country,

attended his funeral

and, weeping, saw the Corps Interred

at the West side of the Altar,

in this Church

THE WEIRD DESTINY OF

Doctor Joseph Ignace Guillotin

JOSEPH IGNACE GUILLOTIN was born on the 28th of May, 1738, in Saintes (Département Charente-Inférieure). He was the son of Joseph Guillotin, an advocate, and Catherine Agathe, his wife. No better stock existed throughout France. His preliminary studies were made at Bordeaux and at the College of Aquitaine (M.A. December 11, 1761). He entered the Jesuit order as a novitiate and for several years served in professorial capacity in the Jesuit college at Bordeaux. But imperative inclinations led him to begin the study of medicine, and he was graduated at Rheims with the degree of M.D. on January 7, 1768, having first studied at Paris under Antoine Petit from 1763 to 1768. The degree at Rheims meant much less expense, but he promptly returned to Paris and won a competitive scholarship which on October 26, 1770, enabled him to earn the M. D. of the Paris faculty and, as the possessor of a diploma, become a member of that faculty, numbering at that time only one hundred and forty-eight. He soon achieved the distinction of "docteur-regent," which meant that he was commissioned to teach and to

enjoy certain coveted privileges and revenues, much the same as in the case of ordinary professors of a German university.

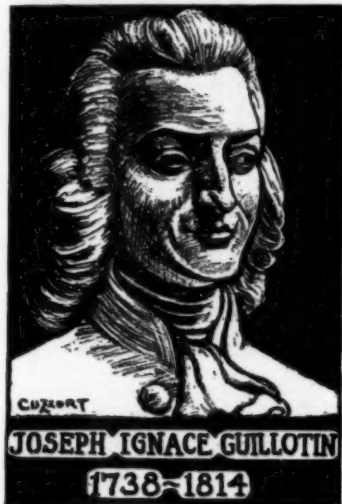
Until about 1788 he practiced medicine in Paris with great success and distinction. He married, on July 15, 1787, Marie Louise Saugrain.

Guillotin did not originate the idea of a decapitating machine; he got it from the description of an execution that had taken place at Milan in 1702; this he found in an anonymous work titled *Voyage historique et politique de Suisse, d'Italie, et d'Allemagne*. The original mechanical method of decapitating has been ascribed to the Romans and the Persians. In Italy, from the thirteenth century, a decapitating machine called *mannaia* was employed. During the Middle Ages the Germans used a machine called the *Diele*, the *Hobel* or the *Dolabra* for a similar purpose. Something very nearly like it (the "maiden") was used in Scotland during the sixteenth and seventeenth centuries; the regent Morton was decapitated by it in 1581, the marquis of Argyll in 1661, and his son the earl of Argyll in 1685. The Duc de Montmorency was executed at Toulouse in 1632 by a "falling axe." In 1865 a huge flint hatchet weighing

From the Editorial Research Department of the
MEDICAL TIMES.

about a hundred kilogrammes was found at Limé, in the canton of Sains (Aisne), which was regarded by antiquarians as a guillotine of the Stone Age employed by the Gauls for chopping off heads. The Dutch, during the eighteenth century, employed a decapitating machine in executing slaves in their colonies.

What had been the modes of capital punishment under the old régime? The answer is hanging, drawing (disemboweling), quartering (dismembering), decapitating with



the sword, strangling, burning, boiling, drowning, breaking on the wheel (involving the smashing of the limbs and chest with an iron bar), pressing to death, burying alive, flaying alive, and tearing asunder by means of horse power. These killings were very often bungled. Thus the marquis de Thou had been slashed at eleven times before final decapitation with the sword. Is it any wonder that Guillotin concerned himself deeply with the problem?

Never before or since Doctor Guillotin have a man's humane and democratic ideas, applied, earned for him a more dubious fame than attaches to the name of the French physician, teacher and statesman, Joseph Ignace Guillotin.

For Guillotin, when first elected to the Constituent Assembly in 1789, aimed simply to secure the adoption of a method of execution that would be as swift and painless as possible and do away with the barbarous

torturings, hangings, quarterings and undemocratic distinctions that characterized the types of capital punishment then in vogue. He could not in that age and environment have done away altogether with capital punishment, so, as the scientist, humanist and gentleman that he was (he had already succeeded in properly ventilating and heating the meeting place of the Assembly), he submitted to the Assembly in December, 1789, the proposition that "in all cases of capital punishment it shall be of the same kind—that is, decapitation—and it shall be executed by means of a machine." The immediately desirable reasons he urged in support of this proposition were that in cases of capital punishment the privilege of execution by decapitation (by the sword) should no longer be confined to the nobles, and that it was desirable to render the process of execution as humane as possible. One can see the force of all this in the light of the brutal methods of the day, and no contemporary had any prevision of the Reign of Terror and its gruesome use of the new device on a colossal scale.

It is true that the abolishment of capital punishment had been proposed, but Guillotin knew very well that such a desideratum was not expedient in the existing state of civilization.

Incidentally, as further showing his humane objectives, Guillotin also proposed that the families of executed persons should no longer be subjected to prejudice and disgrace, and that property should no longer be confiscated by decree. Guillotin was also anxious to devise something which in its operation would not stain the hand of a man with the slaughter of a fellow creature and which would promptly strike the criminal in accordance with the spirit of the law, which must sometimes be severe but should never be cruel.

Guillotin is supposed to have taken part, at the command of the authorities, in the consultations that ensued between Sanson, the hereditary executioner, a German maker of musical instruments named Schmidt (principal mechanic), and Doctor Antoine Louis, perpetual secretary of the Academy of Medicine, head of French surgery of the period, and principal physician to the King (Louis XVI). The method was duly adopted in the penal code which became law on the sixth of October, 1791. The first instrument was made for 305 francs by an artisan found by Schmidt after the exorbitant estimate of Guédon, a carpenter and joiner,

calling for an expenditure of about 235 pounds, had been rejected. Schmidt, it appears, ultimately furnished a machine for each of the French departments.

It will be noted that this was two years after Guillotin had introduced his capital punishment proposition and, having retired from the Secretaryship of the National Assembly, he had to be called away from his private practice to take part in the conferences on the exact form that mechanical decapitation for all classes of criminals sentenced to death, which had been approved by the authorities, was to take.

Doctor Louis played an important part in the fashioning of the machine, Guillotin taking a back seat at this stage of the proceedings. The Assembly, through its Committee on Legislation, looked to Louis as an accomplished anatomist and surgeon to judge of the merit of any design proposed for adoption, and we find him writing the following opinion:

Everyone knows that cutting instruments have little or no effect when they strike perpendicularly. When they are examined with a microscope it is seen that they are merely saws of a more or less fine description, which can only be made to work by sliding them over the substance that is to be divided. It would not be possible to behead a person at a single blow with a hatchet or axe of which the edge was in a straight line; but with a convex edge, such as was on the old battle-axes, it is only in the middle of the curve that the blow falls perpendicularly; but the implement, as it penetrates more deeply into the substance it is dividing, acts obliquely at the sides as it slides onwards, and attains its goal with certainty.

When we consider the structure of the neck, of which the centre, the vertebral column, is composed of several bones which overlap in such a manner that there is no joint to be discovered, we cannot possibly feel assured of a prompt and perfect separation when entrusting the task to an agent whose skill is liable to vary, owing to moral and physical causes: to secure certainty in the proceedings they must necessarily depend on invariable mechanical means, of which both the force and the effect can be determined. That is the course adopted in England [This is a reference to the "Halifax gibbet," a decapitating machine used in Yorkshire until 1650]. The body of the criminal is laid face downwards between two posts joined by a cross-beam at the top, whence the convex hatchet is made to fall on the neck by means of a trigger. The beam of the instrument should be heavy enough and strong enough to act efficaciously, like the ram that is used for sinking piles; we know that its force increases in proportion to the height from which it falls.

It is easy to have a machine of this kind constructed, and its effect is unfailing: the decapitation will be accomplished in an instant, in accordance with the spirit and intention of the new law; experiments can easily be made on corpses or even on a living sheep. It will be seen whether it may not be necessary to fix the head of the criminal under a rescent, which would embrace the neck on a level with the base of the skull: the horns or prolongations of this crescent could be fastened with pegs beneath the scaffold.

It will be seen from the foregoing opinion that Louis' idea of a blade with a convex edge was not the type of cutting instrument finally adopted. It remained for the King himself to suggest the proper model, one

that would cut through the tissues of the neck and spine, when properly weighted, with utter efficiency (as it was to cut through his own neck only about nineteen months later). One would almost think that he had some special premonition as to the necessity for a perfect mechanism. For it seems that when Louis had had a model



made from a design by Schmidt, a conference was called at the surgeon's laboratory in the Tuileries at which all the "principals" were present, including the King. Louis demonstrated the device, whereupon the King immediately pointed out that the improperly shaped blade would not work equally well with all necks (his own was thick and short!). Sanson agreed with him. Louis had thought the machine was wholly perfect. The upshot was that the King took a pencil and drew a blade with an oblique edge.

The first experiments were made in the hospital of Bicêtre on five dead bodies.

When the two types of blades were put to the test the problem was seen to have been solved by the King's criticism.

Upon its public appearance in the Place de Grève on April 25, 1792, for the purpose of executing a highwayman, the machine was dubbed *La Louisette* or *La Petite Louise*, in "honor" of the surgeon who had sponsored its production; but since every third French man and French woman bore the names of Louis and Louise, the mob speedily and sardonically proceeded to fasten a tragic immortality upon Doctor Guillotin with the appellation "guillotine." So in the *Journal des révolutions de Paris* for April 28, 1792, the machine is officially called *la guillotine*.

A song ("L'inimitable machine du Médecin Guillotin"), written by a Royalist antagonist of the revolutionary Guillotin, and set to the music of a popular melody, also definitely fastened Guillotin's name upon the machine. Some of the lines of the last stanza run as follows: "The patriotic Guillotin. . . makes of a sudden the machine which will 'simply' kill us, and which shall be named GUILLOTINE!"

It was the outbreak of the Terror in 1793 that consummated the eternal travesty. Guillotin cannot be dissociated from the idea and from its early application, but he had devised something bearing his very name that made possible the executions of the Terror on a "mass production" basis. Against the ultimate holocaust, which appalled and horrified him, he fought bravely, protesting in such terms as to win imprisonment, death inflicted by the machine being narrowly averted because of the execution of Robespierre himself after his fall on the 9th Thermidor, as well as of his fellow triumvirs. Meanwhile, Antoine Louis had himself suffered the fate of a "suspect" under the terrible blade. Nemesis was extremely busy that day.

Guillotin had been prominent, indeed aggressive, in the early revolutionary movement, but took no part in the Reign of Terror. He had become a popular hero in 1788 upon his publication of a pamphlet demanding rights and correction of abuses in behalf of the Third Estate, which won for it a number of Deputies, of whom Guillotin naturally became one for Paris. In 1790 he was elected to the Presidency of the General Assembly. In 1791 Guillotin attempted to reform medical education by more closely associating bedside and didactic instruction. The scheme was comprehensive and

extremely modern but failed of adoption, largely because of the prospective expense and the meager means then available. Not until 1803 did Guillotin see the educational system made more efficient.

During the Reign of Terror he declared that the most just of revolutions must be abhorred if it cost a single drop of blood. He fearlessly denounced Robespierre and bravely protected, in his own home, many victims of the Revolution. It was because of his refusal to give information against the wife and children of Count Mère that he was finally arrested and imprisoned, though, as we have pointed out, he escaped execution.

Before his election to the Assembly Guillotin had served well the cause of medicine and the public health by his work as a member for the Paris faculty of the royal commission whose report drove the celebrated charlatan Mesmer, proponent of "animal magnetism," out of his position of prestige and out of France.

After the Revolution, and with the rise of Napoleon, Guillotin reorganized the badly damaged profession as the Académie de Médecine. He became President of the Comité de Vaccine, having been a pioneer in the application in France of Jenner's discovery.

Guillotin, honorable gentleman, honest public official, and scholarly physician, died on the 26th of March, 1814, in his 76th year, of anthrax. His name has been "stained with the stigma attached to the bestial butchery, the criminal cruelty, and the bloody chaos of the French Revolution." A satiric destiny has doomed him to a strange immortality than which oblivion might be a kinder fate. Let us of the profession of medicine take a just view of his total personality, motives and background, and be fair in our judgment of a brother physician weirdly bewitched by fate.

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THE EXTERNAL EAR

—Concluded from page 427

of his ear was $7\frac{1}{2}$ cm., the width $4\frac{1}{2}$ cm., and the anterior posterior length $3\frac{1}{2}$ cm. The smallest ears were those of a letter-carrier who played an oboe in the Letter-Carriers Band. His length was $4\frac{1}{2}$ cm., and width $2\frac{1}{2}$ cm., and the anterior posterior diameter 2 cm. The average result does not really give the completed picture because a few small ears in our musical group brought the general average down considerably.

Conclusions: Perhaps Lombroso's works were not entirely amiss and deserve some reconsideration. Has brain function a definite relationship to the physical aspect of man? Although there are many controversial arguments, we do know that, to a great extent, the description of a person's facies as being bright or dull, esthetic or coarse, still governs society.

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502 Washington Avenue.

ASSOCIATED PHYSICIANS OF LONG ISLAND

Autumn Outing of Associated Physicians of Long Island to be at Wheatley Hills Golf Club and Nassau Hospital Oct. 6.

Afternoon Program of Case Histories by the Staff of Nassau Hospital.

THE afternoon and evening of Tuesday, October 6th is the date selected for the autumn outing of the Associated Physicians of Long Island. There will be golf all day long at the Wheatley Hills Golf Club on Hillside Avenue in East Williston. This sporty club is ever popular because it is difficult enough to be interesting, but not too much so to be unpleasant. The club house affords ample facilities for dinner and while 80 or 90 are anticipated, a large number will be easily accommodated and will be repaid for attendance by an opportunity to hear a very entertaining after-dinner speaker.

The scientifically minded members who do not play golf have requested that the same kind of program be presented as was enjoyed at Southside Hospital in Bay Shore and at the Huntington Hospital. Therefore short case histories will be presented by staff members of Nassau Hospital on Second Street, Mineola. These case reports will come from the following staffs and will be selected carefully by the chiefs of staff to illustrate some baffling diagnostic point or therapeutic principle. The staffs and their chiefs follow:

Surgery

Dr. Benjamin Seaman of Hempstead.

Obstetrics

Dr. Arthur C. Martin of Hempstead.

Medicine

Dr. F. L. Keays of Great Neck.

Pediatrics

Dr. Louis A. Van Kleeck of Manhasset.

Orthopedics

Dr. Otho C. Hudson of Hempstead.

Otorhinolaryngology

Dr. Henry B. Smith of Hempstead.

As has been customary in the past, each case report will be discussed by a pre-arranged doctor from Brooklyn and thereafter discussion will be open. All six papers read at Huntington Hospital were published in a group in the **MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL**, and it will be possible to do likewise with the reports from the coming meeting at Nassau Hospital.

REMEMBER.

A.P.L.I., Oct. 6.

MEDICAL TIMES • OCTOBER, 1936



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Medical Book News

• All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, New York.

Edited by TASKER HOWARD, M.D.



CLASSICAL QUOTATIONS

• When you visit a patient, neither tarry long enough to become a bore and compel people to wish you would go, nor make your visit so brief or abrupt as to leave the patient feeling that you have not given his case the necessary attention.

Daniel Webster Cathell, *The Physician Himself*. Baltimore, 1882, p. 36.

How To Study Anatomy

THE STUDY OF ANATOMY. Written for the Medical Student. By S. E. Whitnall, M.D. Third edition. Baltimore. William Wood & Company, [c. 1936]. 113 pages. 12mo. Cloth, \$1.75.

This book is written for the medical student, but should be read by all teachers of anatomy, particularly those out of touch with clinical medicine. The author's criticism of teachers and lecturers is pertinent.

Anatomy is discussed as a whole and in relation to ontogeny and phylogeny. The interrelationship of anatomy and physiology is beautifully explained and illustrated.

We doubt if the student just beginning his medical studies can appreciate the clinical discussions. The suggestions on how to study anatomy properly, are excellent. "Learn the body rather than the book;" "Learn the big things rather than the details;" "Describe the dissection in your own words," "draw your dissection;" and "See other dissections;" are all good suggestions, but with the tendency of medical schools to cram in all the details in a very short space of time, these helpful hints are superfluous.

For the advanced student there is a valuable chapter in which books on anatomy and related subjects are briefly reviewed, collateral reading suggested, and a well organized bibliography indexed.

DAVID KERSHNER.

Information Counsel for the Layman

BEWILDERED PATIENT. By Marian S. Newcomer, M.D. New York, Hale, Cushman & Flint, [c. 1936]. 325 pages. 8vo. Cloth, \$1.75.

Curiosity is aroused by the title. It would be possible to interpret it as referring to a patient who, having consulted one physician after another, finds himself lost in a sea of conflicting opinions, with the result that he truly typifies the "Bewildered Patient." Or, overwhelmed by the rapidly accumulating additions to medical knowledge he finds himself completely baffled and perplexed; this, at times, amounts to chagrin when he is unable to comprehend the discussion of medical subjects appearing so frequently in the news of the day.

It is the purpose of the book to tell the patient in understandable language many of the fundamental and also the more common up-to-date facts underlying the human mechanism and its deviations from the normal. It stresses most commendably the importance of psychic influence on health and disease. Every doctor of experience heartily subscribes to the following. "There should be a health counsellor, an understanding doctor to every family."

This book gives the prospective patient sound knowledge in a pleasant heart-to-heart fashion. He must not try to read it as he would a novel, or else he will truly become a "Bewildered Patient."

S. R. BLATTEIS.

More International Clinics

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Edited by Louis Hamman, M.D. Volume 2, Forty-Sixth Series, 1936. Philadelphia. J. B. Lippincott Company, [c. 1936]. 327 pages. Illustrated. 8vo. Cloth, \$3.00.

Rigid dietary restriction seems to be as beneficial in cases of heart failure as that following the use of digitalis, according to one detailed report in this issue.

The moot and puzzling problem which concerns the possible influences of changes in climatic environment on health and disease are dealt with in an interesting manner, even though the average medical reader will hardly comprehend such undue stress on humidity and temperature factors. Some of the sweeping statements in this chapter are open to proof or confirmation. For example—"Diabetic patients from the North almost invariably find their disease less troublesome and easier of control when they migrate to tropical and sub-tropical climates."

A critical evaluation of so-called protective vaccines for tuberculosis, especially B. C.G. vaccine, should be of value inasmuch as the favorable side of the story has occupied our major attention heretofore.

An especially valuable article is that on asphyxia neonatorum which decries such familiar but violent methods for resuscitating the newborn, or in hastening it to cry, by slapping, swinging, or cardiac injections in favor of gentle methods.

The subjects of simple goiter, hemophilia, and surgical diseases of the gastro-intestinal tract are dealt with in routine textbook fashion, and merely serve to assure the practitioner that he can still abide by his routine methods without appearing old-fashioned. There are additional chapters of value dealing with the pathological physiology of emphysema, extracellular body fluid, and the syndrome of hemoconcentration.

EMANUEL KRIMSKY.

Allergy for the Otolaryngologist

ALLERGY OF THE NOSE AND PARANASAL SINUSES. A Monograph on the Subject of Allergy as Related to Otolaryngology. By French K. Hansel, M.D. St. Louis, The C. V. Mosby Company, [c. 1936]. 820 pages, illustrated. 4to. Cloth, \$10.00.

This volume presents the subject of allergy from the viewpoint of an otolaryngologist. It seeks to acquaint the otolaryngologist with the many new and important de-

velopments in the field of allergy, and to familiarize the allergist with the most recent pertinent findings in otolaryngology.

In several introductory chapters the normal physiology, biochemistry, and bacteriology of nasal secretions are presented. Then follow histologic studies of the nose and sinuses in allergy and infection. Other sections deal with nasal symptomatology, cytology of the nasal secretions, and roentgenographic studies in allergy. Chapters on related subjects such as bronchoscopy in asthma, results of treatment by rhinologic methods, allergy of the ears and eyes, allergy and sinusitis in children, are also included. Interspersed among these chapters are others dealing with the theoretical considerations of anaphylaxis and hypersensitivity, as well as some devoted to clinical discussions of the symptomatology, diagnosis, and treatment of all common manifestations of allergy in humans.

The author excels in those sections in which he is able to write from his own exhaustive researches in the otolaryngologic aspects of allergy. His discussions of the broader aspects of immunology and clinical allergy are naturally less effective but these serve to arouse the interest of the reader in the many new and ever increasing phases of the subject.

The author has made every effort to include all necessary practical information which the physician may need in the management of his allergic patients. The volume is a more general text book on allergy than its title indicates.

A large and exhaustive bibliography is presented at the end of each chapter. The material is carefully written, well organized, and effectively indexed. The book is the first of its kind and satisfies the need for a work which correlates the many researches in the fields of allergy and otolaryngology.

M. WALZER.

A New Histology

A TEXTBOOK OF HISTOLOGY. By Joseph Krafka, Jr., M.D. Baltimore, The Williams & Wilkins Company, [c. 1936]. 246 pages, illustrated. 8vo. Cloth, \$2.50.

The book is a fair guide to a complete laboratory and theoretical course of histology. It may also be used as a quick review of the subject.

NATHAN REIBSTEIN.

MEDICAL TIMES • OCTOBER, 1936

Reprint of a Classic

ON PERCUSSION OF THE CHEST BEING A TRANSLATION OF AUENBRUGGER'S ORIGINAL TREATISE ENTITLED "Inventum novum ex percussione thoracis humani, ut signo abstrusos interni pectoris morbos detegendi." [Vienna, 1761]. By John Forbes, M.D. [London, 1824]. Introduction by Henry E. Sigerist. Baltimore. The Johns Hopkins Press, [c. 1936]. 31 pages. 4to. Paper, \$75.

It is a fine thing to have available at a modest price a reprint of Forbes' original English translation of this medical classic. In an introduction of a few pages, Professor Sigerist tells the story of its remarkable author and the story of the remarkable book, buried for fifty years and brought to light and to fame by Corvisart, physician to Napoleon. Sigerist advises that every student beginning physical diagnosis should first read Auenbrugger. Certainly the teacher should. The book is basic. From the historical point of view, one gathers something of contemporary medical knowledge. In discussing pleural effusion Auenbrugger mentions as one of the causes, "too great tenuity of the contained fluids" (in the vessels). Richard Bright's collaborator, Bostock, explained edema thus. How many years before Epstein was the idea born? One is struck, too, with the consistency with which Auenbrugger appeals to the autopsy to verify his statements. His facts are plain, thoroughly worked out, and important. So after one hundred and seventy-five years we welcome a new edition.

TASKER HOWARD.

A Frank Discussion of Prostitution

PROSTITUTION IN THE MODERN WORLD. A survey and a Challenge. By Gladys Mary Hall, M.D. New York: Emerson Books, Inc., [c. 1936]. 200 pages. 8vo. Cloth, \$2.00.

Prostitution is an evil that is as old as the human race. "Prostitution in the Modern World" is a volume well arranged and thoroughly adequate. The author has attacked a big problem in a common-sense, fairminded way and has done it unusually well.

There are nine chapters in the volume; each taking up a specific problem but all are integrated so that the subject is presented in a connected, flowing manner. In chapter 2 the practice and present extent of prostitution is presented. No country or no class of society is exempt. Promiscuity does not always mean prostitution. In fact unpaid promiscuity of recent years, in many countries, has "cut in" on the professional prostitute to a considerable extent. In chapters 3 and 4 the causes of promiscuity, on the part of both men and women, are

discussed in a calm, considerate manner. Following this we come quite naturally to the international aspect, and in chapter 5 the subject of traffic in women and children, as exposed by the League of Nations enquiry, is dealt with in outline form. Chapter 6, a very important one, discusses the inevitable sequence to promiscuous habits. Chapter 8 brings us to a study of the laws and their inadequacy in relation to prostitution. And lastly, in chapter 9, the author calls attention to the proposals embodied in the so-called "new morality" and subjects them to searching criticisms.

The subject matter in this volume has not solved the problem of prostitution or promiscuity, but it is a sane contribution to the better understanding of this grave and world-wide social problem.

We can recommend the book to priest, social worker and doctor.

H. B. MATTHEWS.

New Edition of Peters

THE EXTRA-OCULAR MUSCLES. A Clinical Study of Normal and Abnormal Ocular Motility. By Luther C. Peter, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1936]. 351 pages, illustrated. 8vo. Cloth, \$4.50.

The second edition of "Extra-Ocular Muscles" is as welcome as its predecessor. This little volume covers in a careful and systematic manner the more practical phases of theory and practice of ophthalmic myology. It begins with anatomy and physiology, and carries on through the methods of examination and diagnosis. The sections on non-surgical and surgical treatment are presented in a clear and concise manner, supported by very satisfactory illustrations and a reasonably extensive bibliography. The book can be strongly recommended, not only for the beginner but for those particularly interested in the subject. Its study provides a means of gaining a broad ground work. This can be supplemented by reference to more elaborate and special studies in the literature as well as from clinical practice.

JOHN N. EVANS.

Atlas Junior

ATLAS OF HUMAN ANATOMY. With explanatory text by Jesse Peirce Williams, M.D. New York, Barnes & Noble, Inc., [c. 1935]. 64 pages, illustrated. 8vo. Cloth, \$2.00.

This is a little volume of 62 pages with a very brief introduction giving the basic conception of cellular development and a brief description of the various systems of the human body.

The bulk of the book is taken up by exquisitely executed eight-color plates, giving detailed structures of the anatomy of the human body. The book is worth its weight in gold for those who wish to acquaint themselves with anatomy without going into the finer details of histology and comparative studies.

GEORGE WEBB.

More About The "Safe Period"

TIME OF OVULATION IN WOMEN. A Study of the Fertile Period in the Menstrual Cycle. By Carl G. Hartman. Baltimore, Williams & Wilkins Company, [c. 1936]. 226 pages, illustrated. 8vo. Cloth, \$3.00.

This timely book is well worth reading. Intended primarily for the busy practitioner, it is so simply, concisely and clearly written that an intelligent layman can understand it, if he will but take the trouble. It is a scientific discussion of the safe period, a topic of tremendous interest at the present time. The evidence is critically examined. Secretly, he hopes Knaus is right, and furthermore his ovulation data for women agree to a day with his own very extensive experimental work on the monkey. "The opponents of the safe period," he says, "are more and more placed on the defensive as new facts accumulate." Dr. Dickinson, who has written so many introductions, writes an engaging foreword, and takes pains to say the National Committee on Maternal Health is not responsible for the views of the author. Carl Hartman is so well known as an investigator in this field, that his critical review of safe and fertile periods in the menstrual cycle should be widely read. Every physician should read this simple, interesting, almost authoritative book.

CHARLES A. GORDON.

Good Advice for the Young Doctor

THE TRUE PHYSICIAN. The Modern "Doctor of the Old School." By Wingate M. Johnson, M.D. New York, The Macmillan Company, [c. 1936]. 157 pages. 12mo. Cloth, \$1.75.

In this kindly, stimulating talk to the young graduate, Dr. Johnson outlines sound principles of attitude and activity that should go far to insure him happiness and success in his work, if he is wise enough to take them to heart. As the title implies, it is no mere treatise on the achievement of a reputation or of riches. The ideals of the profession color the whole presentation. Some of the problems of putting them to use are discussed, first for the sake of their own realization, and secondarily, for the

satisfaction and success of the young practitioner. The book recalls Cathell's "The Physician Himself" which for over fifty years held an honored place in the library of many a physician, young and old. The new volume is shorter and offers much more specific advice on practical matters concerned with starting out in practice today. It might be remarked that even old-timers would enjoy and profit by reading the new work or rereading the old.

TASKER HOWARD

A German Monograph on Hemorrhoids

DAS HAMORRHOIDALLEIDEN. Seine Komplikationen und deren Behandlung. By Dr. Kasper Blond and Dr. Herbert Hoff. Wien, Franz Deuticke, [c. 1936]. 121 pages, illustrated. 4to. Paper, M. 12, Bound M. 14.40.

This is an interesting brochure of 121 pages and 50 illustrations, many of them beautifully executed in color, which expresses the authors' theory of the fundamental principles in etiological relation to hemorrhoids, fissures and fistulae. The authors essay to demonstrate that these local secondary manifestations are due to primary systemic conditions, coupled with dysfunction of the portal, and pelvic veins. Their logic is good and their argument clearly stated. Based upon these conceptions, Blond and Hoff have treated some 2300 patients with results which seem to warrant their mode of procedure. There are 14 chapters, the last of which describes and illustrates a very ingenious armamentarium. The German is fluent and unusually free from circumlocution. The brochure is of value to both surgeon and specialist.

J. M. VAN COTT.

From Rochester

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Edited by Richard M. Hewitt, M.D., Lloyd G. Potter and A. B. Nevling, M.D. Volume 27. 1935. Philadelphia, W. B. Saunders Company, [c. 1936]. 1353 pages, illustrated. 8vo. Cloth, \$12.00.

The purpose of this book has been well achieved in that it places at the disposal of general practitioners, diagnosticians and general surgeons a wealth of material representing the varied activities of the Mayo Clinic and the Mayo Foundation.

In all there have been 693 articles written in 1935, 83 of which appear in full, 75 by abridgement, 95 by abstract and 458 by title. As usual material appears under the headings of Alimentary Tract, Genito-Urinary Organs, Ductless Glands, Blood and Circulatory organs, Head, Trunk and Extremities, Chest, Skin and Syphilis, Brain

Spinal Cord and Nerves, Radiology, Anesthesia and Gas Therapy and Technic. To read and digest this volume represents a liberal education. Therefore, to review and comment especially in detail is not feasible.

R. H. FOWLER.

Hygiene for Nurses

HYGIENE AND SANITATION. A Text-Book for Nurses. By George M. Price, M.D. Sixth edition, thoroughly revised. Philadelphia, Lea & Febiger, [c. 1936]. 295 pages. 8vo. Cloth, \$6.00.

This textbook originally published several years ago now appears in revised and up-to-date form in its sixth edition.

Hygiene and Sanitation are described in their many phases in several chapters. The hygiene of habitations, foods and food supplies, and meats and dairy products are followed by a discussion of the hygiene of childhood from the prenatal period to school-life, with another chapter devoted to the hygiene of occupations.

Then follows a consideration of infectious diseases and their prevention which leads logically to a final outline of modern personal hygiene procedures.

The subject matter is presented in a clear, concise style serving well its objective of information for nurses especially those working in public health and other community activities. It gives to nurses the essential facts concerning hygiene which will enable them to perform their work more intelligently.

Dr. Price rightly assumes that nurses serve under the guidance of supervising physicians but this book furnishes information by which the nurse may better act in emergencies when medical guidance is not available.

ALFRED E. SHIPLEY.

A New Issue of a One Volume Yearbook

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D. and A. Rendle Short, M.D. Baltimore, William Wood and Company, [c. 1936]. 555 pages, illustrated. 8vo. Cloth, \$6.00.

The editors of this Medical Annual have in their introduction noted the pitfalls to be avoided in a medical year-book. To merely record new methods or drugs for which conclusive evidence is lacking, they rightfully feel, can only serve to bring discredit and lack of confidence. And yet, they have had to include numerous novel unproven and unconfirmatory suggestions for the simple reason that they look promising; and the elements of time and corroborative evi-

dence are required to determine the true merits of such measures.

In the class of recent developments of promise, a few may be listed as follows:

1. The mortality from lobectomy has shown an encouraging drop from 80% ten years ago to about 14% today. Also, surgery has advanced considerably in the treatment of bronchiectasis.

2. The value of serum in Type 1 pneumonia appears to be already established in England, where it first encountered a good deal of skepticism.

3. Abdominal surgery has yielded splendid results in cases of hypertension found to be due to tumor of the medulla of the suprarenal gland.

4. A very promising method of treatment for B. Coli pyuria, according to one contributor, appears to be the administration of mandelic acid which, unlike β -oxybutyric acid, is not destroyed in the intestine.

5. There has been considerable progress in radiotherapy for malignant disease of the pharynx and larynx, largely through the work of Coutard who has proceeded on the principle that success can only be achieved by protracting the period of treatment, and by fractionating the dosage.

Most of the other topics dealt with are arranged, as usual, alphabetically and discussed in review fashion. Such reiteration can only serve as a panoramic reminder of things which are apt to slip from our considerations because of relative uncommon encounters. Other subjects such as diathermy of tonsils, which made quite a sympathetic response a few years ago are now in for vigorous criticism. It is to be hoped that the above-mentioned measures of promise which just now appear so hopeful will continue to win the attention which is being showered on them at this moment.

EMANUEL KRIMSKY.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

CYSTOSCOPY AND UROGRAPHY. By Jas. B. Macalpine, F.R.C.S. Second edition. Baltimore, William Wood and Company, [c. 1936]. 478 pages, illustrated. 8vo. Cloth, \$9.00.

A PREFACE TO NERVOUS DISEASE. By Stanley Cobb, M.D. Baltimore, William Wood & Company, [c. 1936]. 173 pages, illustrated. 8vo. Cloth, \$2.50.

Contemporary Progress

—Continued from page 440

treated 11 showed marked improvement with a definite decrease in the number and severity of the paroxysms within a few days, and a reduction in the duration of the disease; 7 cases showed moderate improvement with a definite decrease in the number and the severity of the paroxysms, but little if any decrease in the duration of the disease; 6 cases showed slight or no improvement. The best results were obtained in cases in which treatment was begun within the first ten days of the disease; of 11 cases treated within this period, 7 showed marked improvement, 3 moderate improvement, and only one no definite improvement. In 3 cases the antigen was given prophylactically to children exposed to infection in the family. Of these, one had no symptoms and 2 developed mild attacks. The intranasal use of antigen has the advantage of simplicity of administration and avoids the use of the hypodermic needle; it causes no irritation of the nasal mucosa and no reaction of any kind. In the cases reported, a high percentage of favorable results was obtained, sufficient to justify its use in larger series of cases.

Three Day Fever in Young Infants

● J. R. DREYFUS (*Presse médicale*, 44:116-1164, July 18, 1936) notes that a three day fever occurring in infants under two years of age, sometimes described as the "sixth disease," has not received the attention that it merits, because it may be confused with other acute infectious diseases, especially rubella (German measles) or a mild type of measles or scarlet fever. The author notes that 52 cases of this disease have been reported from the Children's Clinic of the University of Berne, Switzerland. He has seen five cases, three of them at this clinic; and other cases have been reported in American literature. The disease is characterized by a three day fever with a sudden fall in temperature to normal; the appearance of a rubella-like exanthem when the temperature reaches normal, which disappears in twenty-four hours; and a blood count showing a leucopenia with a granulocytopenia. The appearance of the exanthem after the fever and the blood count serve to differentiate it from other infectious diseases.

Book News

—Continued

SYMPTOMS AND SIGNS IN CLINICAL MEDICINE. An introduction to medical diagnosis. By E. Noble Chamberlain, M.D. Baltimore, William Wood and Company, [c. 1936]. 424 pages, illustrated. 8vo. Cloth, \$8.00.

SURGICAL DISEASES AND INJURIES OF THE GENITO-URINARY ORGANS. By Sir John Thomson-Walker, F.R.C.S. Second edition, revised. Edited by Kenneth Walker. Baltimore, William Wood and Company, [c. 1936]. 974 pages, illustrated. 8vo. Cloth, \$10.00.

AN INDEX OF TREATMENT BY VARIOUS WRITERS. Edited by Robert Hutchison, M.D. Eleventh edition, revised. Baltimore, William Wood and Company, [c. 1936]. 1020 pages, illustrated. 4to. Cloth, \$12.00.

POST-GRADUATE SURGERY. Edited by Rodney Maingot, F.R.C.S. Volume II. New York, D. Appleton-Century Company, Inc., [c. 1936]. Page 1747 to 3572, illustrated. 4to. Cloth, \$15.00.

THE THYROID. Surgery Syndromes Treatment. By E. P. Sloan, M.D. Edited by Members of the Sloan Clinic. Springfield, Charles C. Thomas, [c. 1936]. 475 pages, illustrated. 4to. Cloth, \$10.00.

FOUNDATIONS OF BIOLOGY. By Loran Lora Woodruff. Fifth edition. New York, The Macmillan Company [c. 1936]. 583 pages, illustrated. 8vo. Cloth, \$3.50.

SYPHILIS AND ITS TREATMENT. By William A. Hinton, M.D. New York, The Macmillan Company, [c. 1936]. 321 pages. 8vo. Cloth, \$3.50.

STAPHYLOCOCCUS FOOD POISONING

That certain staphylococci can produce food poisoning has been established not only by monkey tests with sterile filtrates but by a large number of experiments with human volunteers. Moreover, several outbreaks have now been recorded where the staphylococcus has been definitely incriminated. The isolated strains differ widely both in cultural and in agglutinative characters. Some are hemolytic, some are not, some are of *albus*, some of *aureus* type. Prof. E. O. Jordan of Chicago has shown also that the strains producing toxic filtrates are not restricted to those isolated from implicated foods but may be derived from many sources, including normal and diseased human throats.

The vehicle in which the organism is conveyed is mostly "cream cakes," filled with custard rather than pure cream, although in the first recorded outbreak (M. A. Barber, 1914) the agent was milk.

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